The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 88, NO. 4 CHICAGO, ILLINOIS JANUARY 22, 1927

ROENTGEN-RAY DIAGNOSIS OF PLEURAL EFFUSIONS, GENERAL AND LOCAL

THEIR RECOGNITION, LOCALIZATION AND DIFFERENTIAL DIAGNOSIS *

L. R. SANTE, M.D.

Associate Professor of Radiology, St. Louis University School of Medicine

ST. LOUIS

In no branch in the field of chest radiography is roentgen-ray examination of more importance than in the diagnosis of pleural effusions. The diagnosis of generalized pleural effusions, especially when associated with consolidation, is naturally very difficult owing to the confusion of physical signs; the detection of localized collections of fluid and the determination of their extent and location is often impossible. It is my object here to point out the usefulness of the roentgen ray, not only in the diagnosis of these conditions, but also in their localization. This paper is based on the study of 665 cases of pleural effusion treated at St. Mary's Hospital and the St. Louis City Hospitals during the last seven years.

Pleural effusions may be free in the pleural cavity, or may be pocketed or localized. Hydrothorax usually occurs from congestion as the result of cardiac incompetence, or from an intoxication, such as that of nephritis. The fluid is usually a transudate and forms free in the pleural cavity. Effusions resulting from tuberculosis, although due to an infectious agent, are likewise usually composed of very thin fluid and show little tendency to pocket. Fluid from malignant involvement of the pleura bears no characteristic features, and unless other indications of malignancy are present, cannot be differentiated.

Pleural effusions composed entirely of blood seem to cast a slightly less dense shadow, but this is not characteristic and cannot be relied on for differential diagnosis. Blood remains fluid in the chest for weeks and even months, showing little, if any, tendency to clot. Organization has never been observed. Those derived from pyogenic infectious processes, however, are very apt, on account of their acute inflammatory nature, to result in pleural adhesions and pocketing.

General pleural effusions, when well established, present a more or less characteristic picture (fig. 1). The fluid, being of greater density than the air-containing lung, casts a dense shadow in marked contrast to the normal lung shadow. Pleural effusions start first in the most dependent portion of the chest, and the costophrenic sinus is first to be obliterated by its density. As the fluid increases, the shadow becomes larger and the upper border of the fluid takes on a characteristic concave contour, curving upward and outward from the hilum region to the axillary line, the level again descending posteriorly, producing the S curve, long known to clinicians. The explanation for this curved upper border is found in the simultaneous application of several forces. By reason of the attachment of the lung at the hilum, and on account of its less elastic structure in this region, the lung is not only more stabilized at this point but is also less compressible than at the periphery. The outer margin of the lung, being lighter, more compressible and freely movable, is floated upward by the increasing collection of fluid. This tends to produce a curved margin extending upward at the axillary line. The narrow, ribbon-like shadow at the lateral chest wall is due to the fluid being "sucked up" by the capillary action of the two approximated layers of pleura. This action must, in part, overcome the cohesive force that binds the two moist surfaces together. The last place to lose its aeration is the medial margin of the apex, and even in enormous effusions this aerated area can usually be detected.

As the quantity increases, the weight of the fluid usually causes a displacement of the heart and mediastinal structures to the opposite side, and may even produce a bulging of the ribs and widening of the intercostal spaces (fig. 2). Mediastinal displacement is the rule in children, and usually is present in adults unless a long continued infection has caused fibrosis, rendering the mediastinum fixed. Mediastinal displacement may be considered as practically characteristic of pleural effusions; no other condition associated with a shadow of increased density produces it, with the exception of large primary lung tumors, and these are so rare as to be practically negligible from a diagnostic standpoint. When fibrosis of the mediastinal structures, from long standing inflammatory process, renders the mediastinum fixed, then the medial portion in the apical region usually remains aerated in effusions, whereas it is usually consolidated in massive pneumonia (fig. 3).

Under certain conditions, pleural effusions, even when generalized, may not present this characteristic appearance. When the lung has lost its resilience and has become heavier than the surrounding medium, either from pneumonic consolidation or from fibrosis, the pleural effusions assume a ribbon-like form along the lateral wall. The lung, being heavier than normal, is not floated upward, and the characteristic S curve is not produced (fig. 4). The negative pressure normally present in the chest has no direct bearing on the production of the curved upper border of the pleural

* From the roentgen-ray departments of St. Mary's Hospital and the St. Louis City Hospitals.

* Read before the Section on Radiology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

effusion except so far as it serves to keep the lung expanded, offering an elastic body for the fluid to act on. If the negative pressure were not present, the lung would collapse and the fluid would seek a level in the most dependent portion of the cavity thus formed. In the presence of pneumothorax, then, any associated pleural effusion will seek a level. Here, again, the fact that the fluid seeks a level is not due to the loss of

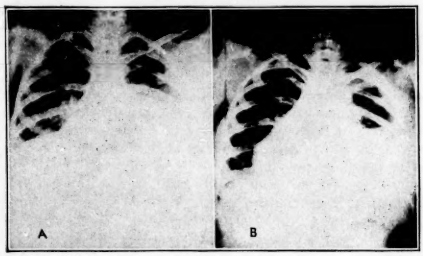


Fig. 1.—*A*, moderate pleural effusions, causing a dense shadow in the lower portion of the chest, obliterating the costophrenic angle with the characteristic upper border, extending upward and outward from the hilum to the axilla; taken with patient standing. *B*, little change in the upper level of the fluid on assuming the lying position. Lying on the abdomen causes an increase in the intra-abdominal pressure, pushes the diaphragm up and causes a broadening of the lower part of the chest. Pleural effusions unaccompanied by pneumothorax show no change on change of position of patient which cannot be explained by the natural change in shape of the chest.

negative pressure in the chest except so far as it results in the collapse of the lung, which removes the lung as an elastic body for the fluid to press against. Fluid will seek a level in a vacuum just as well as in the presence of air pressure. For instance, a negative pressure can be induced in an old empyema cavity without changing, in any way, the character of the fluid level present.

The next question of importance is: Does the upper level of the fluid change with the changing position of the patient? On this point observers vary. Two extremes of opinion may be cited. Wessler and Jaches [1] state that pleural effusions change their levels readily on change of position of the patient; whereas Stewart [2] maintains that pleural effusions do not change their level, and has demonstrated an instance in which a child having a pleural effusion was completely inverted, its head hanging downward, without change in the position of the pleural effusion from its former position in the lower part of the chest.

I have examined a large number of patients with effusions, both standing and lying, in anterior, posterior and lateral positions, and have failed to note any material change in the level of the fluid which could not be accounted for by the normal change in the shape of the chest in these positions. When a patient lies on the abdomen, the intra-abdominal pressure is increased and the diaphragms are pushed upward, causing a diminution in the length of the chest cavity and a broadening at its base. This tends to push upward any fluid present, and gives the impression of an actual change in fluid level; whereas, there has really been no change at all, the fluid level being modified to accommodate the new form of the chest cavity (fig. 1). The same upward change will be noticed in the upper border of a consolidation, on change of position of the patient from standing to lying.

As the density of the fluid is very nearly that of the subcutaneous tissues and normal organs, the outline of the diaphragms may be obliterated by the confluence of the shadow cast by the effusion with the underlying liver or spleen. The specific gravities of a transudate, blood or pus, are so nearly alike that it is impossible to differentiate the type of effusion present. However, with the advance in technical methods, it may be possible that even such small variations in density may be demonstrable in the future. In adults, the density of the fluid is usually sufficient to obliterate completely the shadows of the ribs; in flat-chested persons, however, the shadow of the fluid becomes less and less dense toward the periphery of the chest, so that at the perietal margin the rib shadows may be quite clearly made out; this is also the rule in children. Hemothorax has a peculiar tendency to produce less obscuring of the costophrenic angle than ordinary effusions, which not infrequently has given rise to erroneous diagnoses of consolidation.

Localized pleural effusions usually occur in the course of inflammatory pleuritis from the entrapping of pus between the opposing layers of pleura. Such localized areas of effusion may be at the chest wall, between the parietal and visceral layers of pleura, or may be interlobar, between the layers of the interlobar pleura. Localized pleural effusions of the chest may be on the lateral, the anterior or the posterior chest walls; they may be between the diaphragm and the base of the lung; between the superior border and the apex, or between the mediastinum and the medial border of the lung.

Regardless of location, there is one unvarying characteristic about localized effusions: the sharply outlined rounded margin, with its base at the periphery and the convexity directed inward toward the lung, because of the compressibility of the lung structure (fig. 5). When the pocket is on the lateral chest wall it can be readily recognized in the anterior or posterior chest film. When it is located on the anterior or posterior chest walls, however, it may be very difficult to differentiate in the ordinary film from lung abscess, consolidation of the lung, or interlobar effusion. Examination in the lateral view, however, discloses the sharply outlined limiting border, bulging in toward the lung. Diaphragmatic collections or localized collections in the lower chest may give shadows similar to fluid free in the chest cavity, but on lateral examina-

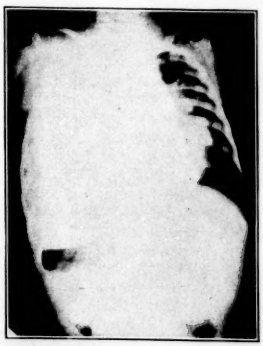


Fig. 2.—As the quantity increases, the weight of the fluid usually causes a displacement of the heart and mediastinal structures to the opposite side, evidenced by bulging of ribs and downward pressure of diaphragm. Mediastinal displacement with pleural effusion is the rule in children, and occurs frequently in adults. When present, it may be considered as characteristic of fluid.

1. Wessler, H., and Jaches, Leopold: Clinical Roentgenology of Diseases of the Chest, Troy, N. Y., the Southworth Company, 1923.
2. Stewart, W. H.: Am. J. Roentgenol. **3**: 559 (Dec.) 1916.

tion their true nature will be disclosed.[3] For the localization of such pockets of pleural effusion, fluoroscopy is of great assistance to determine the optimum position for radiography.

Fluoroscopy should never be relied on alone, however, for diagnosis, and should always be checked by radiographic examination. As the patient is turned from side to side before the fluoroscope, the localized effusion will appear to approach and recede from the chest wall; the point at which it comes to the surface can be exactly located for aspiration or other means of evacuation. Collections of fluid trapped between the lobes of the lung produce shadows extending across the midportion of the lung field from the hilum to the periphery (fig. 6). They may show definite, sharply outlined borders, or may shade off gradually into normal lung density. On fluoroscopic examination of the patient in various positions, it will be found that the shadows of interlobar effusions remain central, never coming to the surface of the lung—unless, as occasionally happens, the fluid itself comes to the surface. Pleural effusions may simulate any other pathologic condition encountered in the chest.[4]

Fig. 3.—Quite frequently, when the mediastinum is fixed, from chronic infection, there is no displacement even with large pleural effusions. Under these circumstances, the condition may be very difficult to differentiate from massive consolidation. When the mediastinum is not displaced with fluid, there always remains a small amount of aerated lung tissue near the medial margin of the apex.

Localized pleural effusions most frequently occur at the lateral chest wall and in the lower portion of the chest. When the diaphragmatic surface is involved, the effusion usually extends anteriorly or posteriorly also. Effusions entrapped in the upper chest —especially apical —are quite rare. They are usually small, and, in my experience, with a single exception they have all undergone spontaneous absorption without surgical intervention. Effusions entrapped between the mediastinal pleura and the medial border of the lung are very rare, and I have never seen one which was closely localized to this area that required operative procedure. Pleural effusions of very thin character (having a high cell content, but not macroscopically pus) may occur in the general cavity as a result of an adjacent infectious process, such as a lung abscess, pocketed empyema or subdiaphragmatic abscess (fig. 7). This is probably an overresponse of nature to the infection. Another condition in which a very small collection of fluid is frequently noted is lobar pneumonia.[5] In many cases of this disease a small, ribbon-like shadow will be seen running along the outer chest wall; this is due to a very thin layer of fluid I have felt that this is nature's effort to prevent the two layers of inflamed pleura from coming into contact with each other—in other words, it is a protective fluid. It is, in fact, much the same process as that in which such effusions occur when there are pyogenic infections in the vicinity.

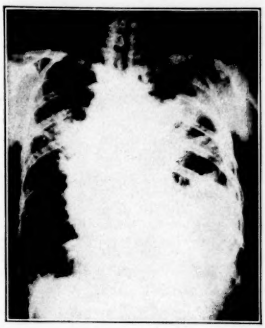


Fig. 4.—Sometimes, when the lung has lost its resilience from consolidation or fibrosis, pleural effusions, even when free in the pleural cavity, do not present the characteristic curved upper border but show rather as a ribbon-like shadow running along the parietal chest wall.

Sometimes the margin of a localized pleural effusion, although sharply outlined, will be somewhat irregular. This is evidence of the coexistence of a fibrinous exudate; the effusion itself may be serous or purulent, and in either event, when small, it may completely absorb without intervention. When large, however, the fibrinous exudate may become organized with fibrous tissue formation and ultimately scar tissue. The process once started may involve lung tissue and, in fact, the entire lung may undergo fibrosis and carnification.[6] Scar tissue retraction pulls the heart and mediastinal structures toward the involved side, making it narrower than normal, and also results in the formation of bronchiectatic cavities. Needless to say, when such a process becomes chronic, no fluid remains which can be evacuated either by aspiration or by surgical intervention; the closely confined character of the lung structure renders attempted aspiration very dangerous. Four instances have come to my attention in which death followed such an attempt.

Fig. 5.—There is one characteristic thing about localized pleural effusions: the sharply outlined rounded margin, base at the periphery, convexly directed inward toward the lung, as a result of the compressibility of the lung structure. A localized collection of fluid may be seen in the upper portion of the chest.

The roentgen-ray characteristics of pleural effusions may be briefly summarized:

In general effusions: When the lung is well aerated and is freely movable:

1. There is a dense shadow occupying the lower portion of the chest.

3. LeWald, L. T., and Green, N. W.: Value of Lateral Projection on Roentgen-Ray Examination of Chest, with Special Referencee to Surgical Treatment of Abscess of Lung, Arch. Surg. **8**: 265 (Jan.) 1924. Pritchard, J. S.: The Value of Lateral and Oblique Roentgen Exposures in the Diagnosis of Thoracic Affections, Arch. Surg. **10**: 557-567, part 2 (Jan.) 1925.

4. Sante, L. R.: A Study of Lung Abscess by Serial Radiographic Examination, Radiology **4**: 183 (June) 1923; Acute Consolidations of the Lung, ibid. **4**: 221 (March) 1925.

5. Sante, L. R.: A Study of Lobar Pneumonia, Am. J. Roentgenol. **10**: 351 (May) 1923.

6. Sante, L. R.: Cirrhosis of Lung, Radiology **3**: 127 (Aug.) 1924.

2. The costophrenic sinus is obliterated.

3. The upper border is curved, concave, extending upward and outward from the hilum toward the axillary line, showing little, if any, change, on change of position of the patient.

4. There is displacement of the heart and mediastinal structures in large effusions, or, when these structures are not displaced, a persistence of the aeration of the apex.

5. Diaphragmatic shadows are obliterated, and there is a continuation of the shadow of the effusion with that of the liver or spleen.

When the lung is consolidated or fibrosed and has lost its resilience:

1. There is a ribbon-like shadow along the parietal wall of the chest.

In local effusions:

1. The entrapping of fluid usually occurs during the course of an inflammatory process.

2. The effusion may occur in any location where two pleural surfaces come in contact with each other; between parietal and visceral pleural layers; at the anterior, posterior or lateral chest wall; between diaphragm and lung, mediastinum and medial border or interlobar.

3. Whatever the location, the effusion produces one characteristic shadow — convex rounded border, with its base at the periphery, and the convexity inward toward the lung.

ABSTRACT OF DISCUSSION

DR. E. S. BLAINE, Chicago: Dr. Sante has presented a well written exposition of the subject of pleural effusions. His illustrations are very convincing, and the big point is the value of the lateral roentgen-ray projection in examinations of these cases. It will be apparent to all who have heard this paper that the lateral view of the chest is not duplicated by stereoscopic films in point of accuracy of localization of a given abnormal shadow density. I think that any one who has seen these illustrations will agree that some of the cases we have had in our own practice would have been diagnosed more accurately if we had resorted to this now too seldom used lateral exposure. We gain something by the lateral roentgenogram as compared with the less satisfactory lateral fluoroscopy. Many lesions will be missed if we fail to take this additional lateral exposure of the chest. Probably one reason that it is not used more often is that we have not become quite as familiar with these lateral projections as with postero-anterior films. I am reminded of the remark a surgeon made on seeing a lateral roentgen-ray projection that I had made; although this lateral view clearly located the lesion he said it was a "rotten" piece of roentgenographic work and that the film had no value. We must not let the referring physician or surgeon who is not qualified in roentgenography discourage us by such remarks. This lateral view will come into greater use when its value is more appreciated in studies of pleural lesions.

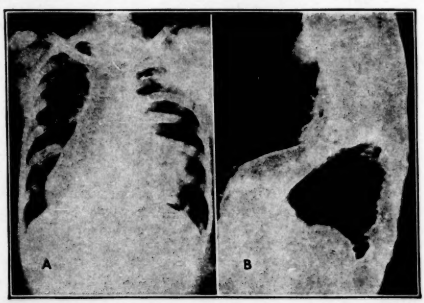


Fig. 6.—*A*, pleural effusions localized between the lobes, presenting the appearance of a consolidation in the hilum region. *B*, lateral view, showing the interlobar character of the effusion. Lateral examination is very helpful in determining the location of such effusions.

DR. SAMUEL BROWN, Cincinnati: I was very much impressed with Dr. Sante's demonstration. I learned to do the lateral view during the war, especially when we had to localize bullets. I found that it would give more information than a stereoscopic film. Since then, every time I have had a patient for anything I have examined the lung. I also state that it is possible to do work with lateral views, although one surgeon approached said he could not read the lateral views. I asked him if he could read anterior views and he was silent.

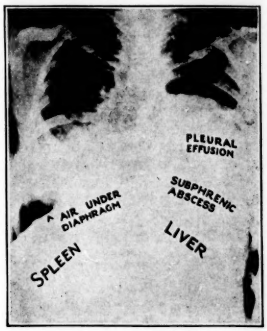


Fig. 7.—Pleural effusions having a high cell count, . . . in which polymorphonuclear cells predominate, but not actually pus, occur as a result of adjacent infection, either in the lung or under the diaphragm. There is a subdiaphragmatic abscess on the right side; air introduced into the peritoneal cavity for diagnosis did not go between the diaphragm and liver disclosing the subphrenic abscess.

DR. FELIX BAUM, Denver: An interesting pathologic picture was published a few years ago by Brauer and Spengler of a spontaneous pneumothorax of the right lung with fluid. A so-called mediastinal hernia caused by the high pressure of the spontaneous pneumothorax was seen on the left side, proving that there are certain so-called weak points in the mediastinum, especially in the anterior one. This is the only explanation for the two different fluid levels on each side of the heart shadow.

DR. L. R. SANTE, St. Louis: We have always made examinations in the lateral view in any suggestive cases. A lateral view of the chest does not always give the best information. It is better to examine with the fluoroscope and turn the patient from side to side in an effort to secure the optimal position to show the pathologic condition present. I am sure that the lateral view of the chest is very valuable in clearing up many otherwise doubtful diagnoses.

Cancer of the Rectum.—The prognosis as regards cure of a patient under 30 years of age suffering from cancer of the rectum is extremely bad; in fact, I have no record of any patient treated for cancer of the rectum under 30 who has not died from prompt recurrence, no matter how drastic the operation, or other treatment, had been. I doubt, in fact, whether it is worth while operating at all on patients under 30 for cancer of the rectum. On the other hand, very old patients, say of 80 or more, may have a carcinoma for many years which grows so extremely slowly that it is doubtful whether it is worth while operating on it, even if this is possible. I know of one patient, now 85 years of age, who has had an epithelioma of the anus for twenty-five years, and to all intents and purposes the disease is behaving like a wart, although there is no doubt of the diagnosis, a microscopic examination of specimens having been made on three different occasions. Thirdly, we have the position of the growth. There are three main positions: an epithelioma of the anus, an adenocarcinoma of the rectum itself, and an adenocarcinoma of the rectosigmoidal junction. In a case of epithelioma the prognosis is good provided the diagnosis is made early. Growths in the rectum also have a good prognosis, provided they are detected early and suitably operated on. Growths at the rectosigmoidal junction have not such a good prognosis as in cases of the growths of the rectum.—Lockhart-Mummery, J. P.: *Lancet*, Dec. 25, 1926.

FRACTURES OF THE SHAFT OF THE FEMUR *

W. K. WEST, M.D.
OKLAHOMA CITY

This report gives the results of treatment in ten cases of fracture of the shaft of the femur in which adhesive traction in connection with a plaster spica was used. No compound fractures will be considered.

The points to be remembered in treating a fracture of the shaft of the femur are: (1) union; (2) length; (3) alinement; (4) apposition, and (5) resulting conditions of adjacent joints. In addition, there are such general considerations as the condition of the patient; the age of the patient; the condition of the skin; accessibility to a properly equipped hospital, and the training of the individual surgeon.

In recent years there has been a tendency toward operations in the treatment of these fractures. On account of the many tragic results following this procedure, the pendulum has swung back to the conservative method of treatment. The closed methods are being used in the greater percentage of cases. Even in the large clinics in which a great deal of open work is done, the femur is treated more conservatively than it has been for several years. In the larger hospitals where open operations can be done efficiently and cleanly, the results are not always satisfactory, and the results obtained in the cases in which operation is performed by inexperienced men are very bad. It is certainly less hazardous to teach the physicians the closed method.

Our next problem is to decide what particular closed method should be used. About four methods are described in most textbooks: (1) Buck's extension; (2) Thomas' splint with adhesive traction or skeletal traction; (3) Hodgen's splint, and (4) the plaster cast. Since there are so many methods, it is plainly evident that none are entirely satisfactory.

Briefly, the objections to these methods of treatment are, first, in regard to Buck's extension, that the patient slides down in bed; consequently, the weights pull on the foot of the bed instead of the leg, and shortening and angulation result. This method, however, has been used very successfully, and will probably always be used by physicians in sparsely settled communities when the patient is treated at home. It is less hazardous than any other method when one considers unexpected complications.

The Thomas splint is a most excellent transporting splint. In the hands of some surgeons it has undoubtedly given very satisfactory results, but my experience with this splint has been disappointing chiefly because of the discomfort it causes and the patient's inability to withstand the counterpressure on the tuberosity of the ischium. I have observed the Thomas splint used in a large clinic with no countertraction but with sliding traction. In other words, it was the Thomas splint being used as a Hodgen's splint, the ring being 2 inches from the ischium. I have not used the Hodgen splint, and consequently cannot discuss it.

The plaster cast is probably used more by physicians over the country than any other method. There are, however, two main difficulties encountered here: the maintenance of length, and the discomfort resulting from a poorly applied spica.

I advocate the use of the plaster spica in conjunction with adhesive weight traction. This is simply a modification of several methods, and is not a technical or difficult procedure. This method was used first on a boy, aged 15 years, who had an oblique fracture of the middle third of the femur. He was too large for the vertical traction method as advocated for small children, and we thought too small for the Thomas splint. A plaster spica was applied with the patient on a Hawley table. After thirty-six hours a roentgenogram was taken, and it showed an overriding of about an inch; so the cast was removed and Buck's extension with coaptation splints was used. This boy was so obstreperous that the traction could not be maintained. I then decided to put on a plaster spica, leaving the adhesive straps on the leg. Sliding weight traction was used as before. The plaster spica held him in the proper position, and a good result followed. I have seen traction used in connection with a plaster cast in other clinics following open operative work, but have seen none used in treatment of the simple cases.

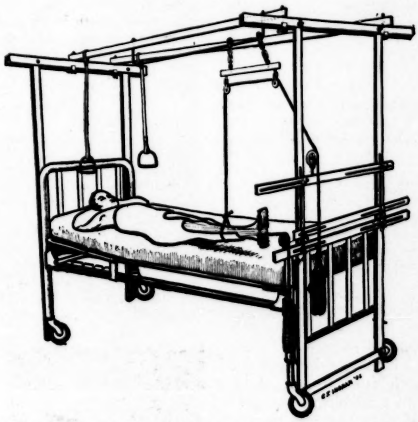


Fig. 1.—Type of mechanical apparatus used in this type of traction. The weight of vertical traction is enough to lift the leg from the bed about 6 or 8 inches (average 16 pounds probably). The weight of horizontal traction is from 20 to 30 pounds. The foot of the bed is elevated 8 inches. The position of the leg is from 15 to 25 degrees abduction, the knee is slightly flexed, and the foot is balanced at right angles to the leg. The Sinclair skate is used as a block at the foot. The handholds allow the patient to move about in bed.

This method has been successful in the treatment of children from 6 to 18 years of age. It is also satisfactory in the upper half of the shaft in adults. This method has been used in the lower third fractures twice, and in both cases there was good length but the union was slow and resulted in some stiffening of the knee. It is impossible to say whether this method could be recommended in lower third fractures.

There is one case in which the plaster spica was used as the supporting splint for Pearson's calipers. It was very comfortable and the length was satisfactory, but there was also stiffness in the knee.

TECHNIC

Immediately after the first roentgenogram has been taken, the patient is removed to the plaster room and placed on the traction table. The legs are pulled out to

* Read before the Section on Orthopedic Surgery at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

equal lengths. Adhesive strapping is applied to the leg in exactly the same manner as when the Thomas splint is used. The stockinet is then pulled up over the leg and the body. Sheet wadding is applied in the usual manner rather lightly. In addition, the back, ribs and pelvis are well padded with one-eighth inch harness felt. A spica is applied from nipple line to ankle. In small children, the cast is carried to the knee on the opposite leg. It is important that the margin of the cast around the lower back and inner side of the thigh be well padded and the stockinet then turned back, giving a soft edge. The foot of the bed is elevated 8 inches and a Balkan frame is placed over it. This frame is similar to the U. S. Army standard. The top half of plaster is cut away from 3 inches above the knee to the end of the cast. There are two weights used, one suspending the leg in the plaster about 6 inches off the bed. This rope is carried through two pulleys overhead and one at the foot, so that the weight hangs off the bed below. The other pulley is attached to a cross piece about the level of the main axis of the leg after it has been properly suspended. The Sinclair skate board is used as the wooden block on the sole of the foot, which transmits the traction from the adhesive to the weight rope. The weights used are about 16 pounds on the suspension and from 20 to 30 pounds on the traction, depending on the size of the patient. Handholds are attached to the frame directly over the patient's shoulders to help him move about in bed.

This method is continued from four to six weeks; then a simple plaster spica, including the foot, is used for protection for four more weeks and after that a caliper splint is used if it is thought necessary.

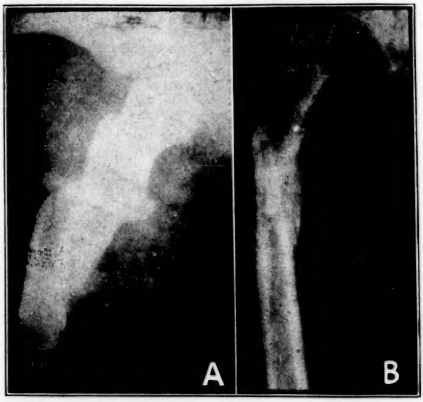


Fig. 2.—Condition of bone: *A*, on entrance to the hospital; *B*, four weeks after treatment. This boy went out of the hospital to his home and I have not seen him for a subsequent picture, but we have a report from him that he has a good leg.

SUMMARY

This is an excellent method for treatment of fractures of the shaft of the femur because of the comfort, the traction and the definite fixation.

The results of fractures in older children have been gratifying. Results in fractures of the upper half of the shaft of the femur have been satisfactory in adults. For the fractures of the lower half in adults there is some question as to whether it is as good as results obtained in other methods.

ABSTRACT OF RESULTS IN SEVERAL CASES

CASE 1.—A boy, aged 15 years, sustained a comminuted fracture of the middle third of the femur. This is the case described above.

CASE 2.—A boy, aged 16 years, sustained a comminuted fracture of the upper third just below the trochanter. He was treated by a plaster spica in conjunction with adhesive sliding weight traction, the weight being 18 pounds. Traction was maintained for four weeks; then the leg was placed in a cast for four more weeks without traction. The end-result was perfect except for one-half inch shortening.

CASE 3.—A boy, aged 11 years, sustained an oblique fracture of the middle third of the femur. A plaster spica was applied with strong traction. The first picture showed satisfactory position of the fragments. Another picture was taken after five days and the overriding was quite marked. The cast was cut off, adhesive straps were applied to the leg, and another cast was applied over adhesive traction. A 15 pound weight was used for four weeks followed by another cast for three weeks. The result was perfect.

CASE 4.—A boy, aged 5 years, sustained a long oblique fracture through the middle third, which was only slightly displaced. This boy was treated from the start by adhesive weight traction and a plaster spica. He was taken home after the fourth day, but remained under my care in this city. The traction was released after four weeks, and another cast applied for four weeks. He has a perfect leg.

CASE 5.—A boy, aged 6 years, with a long oblique fracture of the middle third, was treated from the start by traction and a plaster spica, but in this case the spica was carried to the knee on the opposite leg. The roentgenogram taken after four weeks indicates that he will have a good result, but the case is so recent that it is impossible to estimate the end-result.

CASE 6.—A man, aged 22, sustained a ragged transverse fracture of the lower third with overriding of the fragments about 1½ inches. He was seen first about forty-eight hours after the injury. As usual, the lower fragment was posterior. A plaster spica with adhesive traction was used, the weight being increased up to 32 pounds and then reduced to 25. It was difficult to get the ends of the bones together, but union was obtained with half an inch of shortening. Union was slow, and as a result, slight stiffness of the knee persisted for eight months. I have not seen the patient since.

CASE 7.—A young man, aged 22, sustained an oblique fracture of the upper third, and was seen immediately. Plaster with traction was applied. In this case the reduction was so good that he was allowed to remain in the spica for six weeks; then in the bed for two weeks. Not more than one-half inch shortening resulted.

CASE 8.—A girl, aged 17 years, sustained a comminuted fracture of the upper third. Traction with plaster was used. After being in the hospital a week, she went to a hotel in this city, against my wishes. She was treated, however, in the hotel as best I could. After five weeks she was taken back to the hospital, and an ordinary spica was worn for four weeks. She then left the city. I have not seen her since, but her attorney informed me that she was back on the stage in seven months after the injury, and as far as he could tell she was all right.

CASE 9.—A colored man, aged 45, with powerful musculature, sustained an oblique fracture of the middle third with moderate overriding. A combination of plaster spica and calipers was used (Pearson type). The leg was put up in the usual position of hip flexion, knee flexion, and the cast cut away in order that the tongs could be applied to the condyles. This seemed to be satisfactory for four weeks, when he complained of pain in his knee. A roentgenogram taken in bed showed that one tong had slipped down and was pulling on the skin. There was evidently some danger of an opening into the knee joint. Since the picture showed a beginning callus, the calipers were removed and another

solid spica was applied. I see this man quite often, and he is doing heavy work; he has no shortening but has a slight limitation of motion in the knee in extreme flexion (fifteen months after the injury).

CASE 10.—A man, aged 24, had sustained a transverse fracture of the middle third three years before. He had several mishaps; one was an infected ulcer of the foot, resulting from improper traction, which necessitated removal of Buck's extension apparatus and neglect of the fracture proper. He was then placed in a plaster cast, but he was so thin on account of the previous trouble that pressure sores on his back necessitated removal of the cast. As a result of ineffective fixation, his leg was markedly bowed. He had been walking around with a crutch for two years, when he fell and refractured the femur. In order to straighten the leg, an open operation was done and half an inch of the femur was removed. A tie of kangaroo tendon was passed through the ends of the fragments to prevent displacement of the fragments, and a cast was applied over adhesive plaster, which extended from knee to ankle. A 12 pound weight was used. Union was solid in fourteen weeks. There remained about 1½ inches of shortening.

1115 Medical Arts Building.

Fig. 3.—A man, aged 22, sustained a fracture of the middle third of the femur two years before; because of infection of the foot, following the improper use of traction straps, the leg bowed outward and healed with a marked bowing deformity (*A*). On entrance to the hospital he had refractured the leg in a fall and he asked to have his leg amputated because of so many months of pain and suffering after the original injury. An operation was done and a small amount of bone removed from the upper fragment; the ends were placed together and held by one kangaroo suture. The plaster spica was then applied and traction used as in Figure 1. *B*, union in femur with perfect alinement sixteen weeks after operation.

ABSTRACT OF DISCUSSION

DR. H. W. ORR, Lincoln, Neb.: Fifteen years ago I employed the method of traction that Dr. West has described. While there is no question that this method will give good results in some cases, it cannot be made generally applicable and always give good results. In the first place, I am opposed to elastic traction; fixed traction is much better. It is important to hammer the ice tongs into the femur well; they will not slip if they are firmly inserted the first time. The traction during the application of the cast is not made on the ice tongs but on the foot. The foot should be attached to the lower end of the traction table as indicated. Then the ice tongs are simply maintained in correct position in the cast as to length and rotation. The sterile dressing is placed around the foot and over the opening of the operated wound, if necessary, and then the entire limb is arranged for the plaster. The ice tongs must be lifted up away from the leg, so that there will not be pressure over the anterior surface of the tibia. That is done by means of a muslin bandage over the supporting bar above. They are held in this position while the plaster is being applied. Before the plaster is applied, the position should be fixed by manipulating the ice tongs. The body is put into a cast, extending down to and including the ice tongs. The exact length is checked up by measurement before the plaster is put on. I may say that as a rule, regardless of the age of the patient, we put the patient into a double spica. In that way pull does not occur against the dorsum of the foot or against the heel. All the traction is between the ice tongs at one point and the body cast at the other. The second type of traction is by moleskin adhesive to the ankle. As soon as the plaster is set down as far as the ankle, the lower end of the traction is turned back around the edge of the cast in such a way that the ropes and adhesive are embedded in the cast. When the bandage on the foot is released, the leg does not jump back into the cast; it is held in position; it is in a comfortable, relaxed position. Then, if one wishes to do so, the patient may be put in a bed with a weight hung across the foot of the bed or over a pulley so that the cast is pulled on. It does not have particular advantage, but my main point is that other methods of elastic traction are not so satisfactory either as to maintaining length or as to immobilization as the one shown here.

DR. JOHN DUNLOP, Los Angeles: We handle about 1,600 fractures a year at the Los Angeles General Hospital. I do not believe that there is any one method of treatment of fracture that is applicable to all fractures. Every one of the methods mentioned has its place. We use plaster in all of our transverse fractures. We put the patient on a table and have the roentgenogram made; if we get a good position, that plaster is never changed. We depend very largely on the elastic traction that Dr. Orr dislikes, but the most important thing about that elastic traction is the fact that we have a nurse who knows how to take care of it. We examine those cases every day. We have nurses who know how to handle traction, and there are very few cases of fracture of the femur that are not transverse fractures that do not have to be changed a great many times in the first two or three weeks. Recently we found we had a posterior bowing; by merely putting a pillow under the fracture at that point and keeping up our elastic traction and by lateral coaptation we were able to aline that femur beautifully. As regards allowing patients up without a splint, I think that every patient with fracture of the femur should wear a splint for a year, because they all get bowed if allowed to use the limb early without the splint.

DR. ROLAND HAMMOND, Providence, R. I.: Dr. West has called attention to a very important method of treatment of certain fractures of the femur. I use a similar method in selected cases with very beneficial results. I carry the plaster down over the foot and put in a thick piece of felt about 1 or 2 inches thick on the sole of the foot, leaving the plaster free around the ankle and foot. I then remove the felt and have a space left in which to produce traction. Care also has to be exercised in applying the adhesive straps, and the webbing straps around the ankle. One advantage of this method is that when the need for traction is over, fixation can still be maintained without changing the cast.

DR. H. G. HILL, Memphis, Tenn.: We cannot get away from the fundamentals, that is, reduction of deformity, fixation and immobilization of fragments, in the treatment of fractures of the femur. Regardless of the method employed, if the fundamental principles are carried out and the soft tissue protected and respected, we can expect good function in fractures of the femur as well as fractures in general. Dr. West has described his treatment well; still there are cases that I do not think we can treat with his method. Open reduction is the treatment of last resort, and should be undertaken only by a surgeon familiar with the hazards of bone surgery. There are some cases of fracture of the femur best treated by that method. The autogenous bone graft meets all requirements as an internal splint. Considerable injury may be produced in the knee joint by exerting too much traction in attempting to reduce a fracture of the femur. End-results in fractures of the femur are rather discouraging. Deformity and shortening should not be the rule, but should be rare in all types of simple fractures of the femur.

DR. J. P. LORD, Omaha: The primary treatment of fractures of the femur should not be any considerable problem among those of experience in the practice of surgery. I wish to refer to the cases presenting greater difficulties, the oblique spirals, those that have been in existence for perhaps two, three or four weeks, with marked shortening, with a considerable callus and deformity, a condition which needs intervention, which the experienced ought not to have to open. It is the treatment of some of these that really brings the supreme test of the efficiency of the traction we use, which is the largest single factor to be mastered in the treatment of fractures of the femur. It is my experience that ordinary adhesive plaster traction is responsible for the largest number of bad results. Ordinary adhesive plaster, which may even be poor adhesive plaster, is used with the expectation of getting sufficient continuous traction. It is my practice to keep on hand constantly "moleskin" plaster and to apply it with such thoroughness that it can be depended on, but in some of the more severe and complicated cases of which I have been speaking, even that cannot be made sufficiently adequate. It is therefore my practice in those cases to use ice tongs. I believe it is a reflection on any man who treats fractures of the femur if he has a shortening of more than half an inch. The efficiency of this treatment is demonstrated by the fact that I had three cases in which I produced a little length, about a fourth of an inch, and, therefore, I think we must impress ourselves with the necessity of efficient traction. The traction that has been discussed here today will answer in simple, primary cases; but to overcome shortening and deformity it is necessary to resort to more efficient means.

DR. JOHN WILSON, Los Angeles: I wanted to say a word in defense of elastic traction. I believe that if a fractured femur can be kept under close observation, so that countertraction can be applied, if needed, in suspension in the Balkan frame, we have one very adequate means of securing a satisfactory reduction. Dr. West's paper shows that absolute end on apposition is not necessary for a good functional result. The open treatment of fractures of the femur is to be avoided unless one is reasonably certain that there is interposition of soft parts and, of course, this requires surgical intervention. Ice tongs are satisfactory, but occasionally they slip, as in the slide shown by Dr. West. A Steinman pin passed through the femur is a safe and satisfactory method of applying skeletal traction.

DR. C. S. VENABLE, San Antonio, Texas: I champion the open reduction of fractures of the femur in those cases which are not readily and aptly reduced and easily held in apposition or reduction. I concur entirely with the statement that a great many cases can be held with ice tong traction; but I do not think it effective in those cases of short, spiral obliquity in which a great deal of technical alinement and the reapplication of counterpulls is required in order to maintain a sufficient anterior bow of the femur which is normal and an easy alinement. I think it is much more certain (I have used the method over a number of years) to reduce by the open method those cases in which I originally experienced any of these difficulties. To get a very correct apposition in many cases does not require the application of a foreign body; it does not require either a sliding graft or massive graft, if the application is entirely correct. In cases of short obliquity which do not maintain position, even after proper reduction, some three years ago in St. Louis I reported the use of a plate with Parham bands in order to hold the ends by a three-point suspension, just as one would hold a frame, in order to avoid any lateral or other movement that may occur. I agree entirely that entire fixation is essential, whether it is by plaster, splint or spica or what not. There is no such thing as splinting of a bone directly except by direct splintation.

DR. N. T. KIRK, Washington, D. C.: The war demonstrated fairly well that the use of suspension-traction treatment was necessary in compound fractures. Many severe gunshot fractures of the shaft of the femur were so treated, giving good length and excellent function. Compound fracture of this bone with marked destruction of the bone or soft parts, or infection, cannot be safely treated in plaster. This method is more applicable in simple fractures. Length and alinement are our aim and, if attained, normal function follows unless the joints are too long immobilized. I employ as a routine skeletal traction and ice tongs in adults, suspending the extremity on the half ring hinged Thomas splint. The splint itself acts as a cradle, the extremity being supported in it by broad posterior adjustable slings, and is suspended from a Balkan frame with ropes, pulleys and sufficient weight to balance it and its load and to hold the ring against the tuberosity of the ischium. Anteroposterior alinement is gained by abducting, adducting, flexing or rotating the distal fragment in prolongation of the long axis of the proximal, the position of which is fixed by the action of the muscles inserted into it. Lateral alinement and restoration of the normal anterior bow of the femur is obtained by adjusting the posterior slings. This is always possible when atrophy and sagging begin, and cannot be accomplished when plaster is used. Length is obtained by traction on the ice tongs by means of a rope playing over a pulley with a known amount of weight attached. Thirty pounds will usually give normal length in twenty-four hours. The foot of the bed is elevated, allowing the body weight to act as countertraction. Frequent bedside roentgen-ray examinations show the exact length and alinement of the fracture. Any corrective changes can be at once made. It is applicable in old cases. I have overcome 2½ inches shortening in a three weeks' old fracture with 40 pounds skeletal traction in three days. The tongs may be removed from three to four weeks and skin traction substituted until there is consolidation. Traction is then removed and physical therapy begun, and at the end of three or four weeks, when an ischial weight bearing caliper is fitted, there is usually 90 degrees motion in the knee joint. This method of treatment is ideal; however, it requires the daily attention of the surgeon until the fracture has consolidated, differing in this respect from the case treated by the open method, in which the limb is operated on, put up in plaster and forgotten for a longer or shorter period. I have treated a dozen or fifteen fractures of the shaft of the femur in soldiers in the last three or four years by this method. All are doing duty, with no shortening and better than 100 degrees flexion. I wish to make a plea for the suspension-traction method.

DR. W. K. WEST, Oklahoma City: The object of my paper was to show a method that can be used by the average man. I do not believe that the average man will use calipers; he would be afraid to, I think, because he would not be sure of all the steps necessary in the proper application of it. The question is not what is the best method but the method that can be used best by the most men. It is true that the cases I showed were of the easier type, but they are also the common type. I believe that more than 50 per cent of the fractures away from the industrial centers are of the simple type, and that is the object of showing this method of a simple procedure which can be carried out by most men.

Cause of Intracranial Pressure.—Many theories have from time to time been suggested to explain the etiology of the increased intracranial pressure which is so frequently associated with tumors within the skull. Nevertheless the matter is still largely shrouded in mystery, although careful observations made in large series of cases by a number of investigators offer some significant information. Although clinical evidence of raised intracranial pressure as manifested by headache, vomiting and choked disk is not an absolutely constant accompaniment of tumors within the cranium, it is generally agreed that it occurs at some time in the course of the disease in upward of 80 per cent. From researches which have been made with regard to the presence or absence of increased intracranial pressure, it is clear that the anatomic site of the tumor is of first importance. The rate of growth and size of the tumor also have some influence, but they appear to be of much less significance than the anatomic situation. The histologic character of the growth apparently bears no relation to the occurrence or absence of increased intracranial pressure.—Stopford, J. S. B.: *Brit. M. J.*, Dec. 25, 1926.

FRACTURES OF THE ANKLE JOINT AND OF THE LOWER END OF THE TIBIA AND FIBULA *

EDGAR LORRINGTON GILCREEST, M.D.
SAN FRANCISCO

The rapid advances in operative surgery during the last twenty-five years have cast a glamour over the eyes of the younger generation of surgeons. They have been charmed, so to speak, by the dramatic chapters of abdominal surgery. They talk at great length about the technic of this or that operation (and technic is a constantly changing thing) but often manifest great ignorance on some of the fundamental and cardinal principles of the treatment of fractures; and as the great majority of fractures are still treated by the general surgeon or general practitioner, I wish to state as emphatically as I can that it is just as essential for them to be conversant with the proper treatment of these conditions as with other common surgical problems. By proper treatment I refer just as much to the ultimate complete functional return of the part as to the immediate anatomic reposition of the bones. The treatment of fractures has been relegated too often by the teachers of surgery to the background, as if it were a closed chapter or as if it were of such minor importance that it could be passed over by a few general remarks. The outcome is that not only does the medical student leave the medical school, but too often the intern leaves the hospital with little crystallized knowledge of the standardized and time-proved methods in the treatment

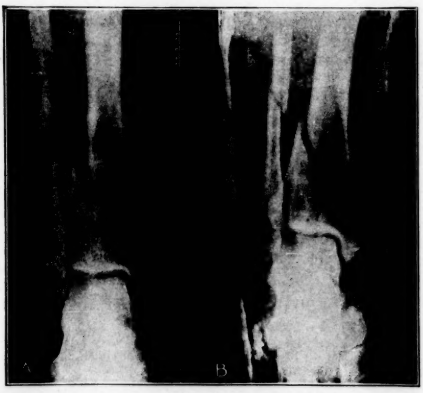


Fig. 2 (case 2).—*A*, before reduction; *B*, after reduction.

of fractures. The consequence is that the final result obtained in the treatment of fractures by the general practitioner and general surgeon is not what it should be.

In a word, it is not an exaggeration when I state that the treatment of fractures has not kept pace with the progress in the treatment of other branches of surgery. Fractures are no less important today than in the days when they constituted the major portion of our surgical practice. Therefore, in presenting for consideration the treatment of fractures of the ankle joint and the lower end of the tibia and fibula I make no apology. I have made no discovery nor have I a new invention or a new method. Rather, if I can add a word which may even in a small measure help to simplify or standardize our existing multiplicity of methods, I shall feel that

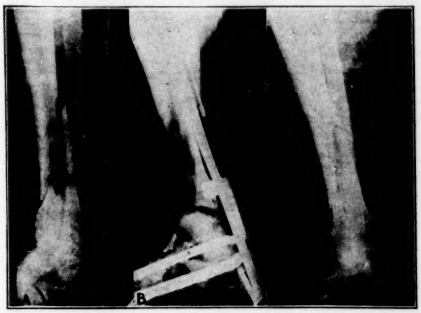


Fig. 4 (case 3).—*A*, before reduction; *B*, after application of skeletal traction; *C*, two months later.

this paper has served its purpose. The trite and euphonious phrase that "every case is a law unto itself" which taps on our ear drums at nearly every medical meeting, I believe, has a pernicious influence and retards progress. This contagious phrase has caused many a man to feel that his case was the exception, and instead of following some standardized method which has proved satisfactory in most clinics over the world, he follows the whims of his own fancy and treats it as a "law unto itself" for several weeks by an inefficient method until the time has passed ever to secure a perfect result.

FRACTURES OF THE LOWER END OF THE TIBIA AND FIBULA

Before taking up the ankle joint proper, I should like to direct attention for a moment to a brief consideration of fractures of the lower end of the tibia and fibula. They interest us in this discussion chiefly as they concern the future function of the foot and ankle joint. Malunion in this region invariably results in discomfort in the foot and ankle. Robert Jones [1] has said: "If I were asked which fracture was the most difficult to reduce in the lower limb, I should say fracture of the tibia and fibula in the lower third."

Fundamental Principles to Be Kept in Mind.—1. The axes of the main fragments of the tibia should remain parallel, and the horizontal and parallel flat-bearing surfaces of the tibia and astragalus (which is the position of strength) should be maintained. 2. One should not be too largely concerned with a slight lateral displacement, as it is quite compatible with perfect ultimate function if the preceding principle has been followed. 3. Traction should not be spared; it is seldom overdone. It should be unyielding until proper aline-

* From the Department of Surgery, University of California Medical School.
* Read before the Section on Surgery, General and Abdominal, at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.
*Owing to lack of space, this article is abbreviated here by the omission of several illustrations. The complete article appears in the Transactions of the Section and in the author's reprints.

1. Jones: Orthopedic Surgery of Injuries. Jones and Lovett: Orthopedic Surgery. Jones: Brit. M. J., Dec. 7, 1912.

ment has been secured. 4. No matter what method is used for the fixation or extension of these fractures, the foot should nearly always be held at a right angle (dorsiflexion) unless: (*a*) this position produces a backward bowing at the seat of the fracture, or (*b*) the fracture involves the anterior surface of the tibia into the joint when the foot should be placed in plantar flexion. The foot should be held in inversion and the arches of the foot supported.

Methods of Treatment.—Immediate reduction under general anesthesia and immobilization in plaster will suffice for the majority of these fractures. This reduction consists of traction and manipulation, and usually not enough traction is exerted to overcome the spasm. In these cases, as in all fracture cases, time is not our ally, and every hour decreases our chances of securing a perfect result. They should be looked on as an acute emergency. It is folly to wait for the swelling to decrease or the patient to become more comfortable. Nothing will reduce the swelling so much or decrease the pain more than immediate reduction. I am impressing this point more and more on my students. It cannot be overemphasized. In case 1 there was a long spiral fracture involving the tibia alone. It occurred in a young girl and was treated for one week as a sprain before she was brought to us or before a roentgenogram was taken. While a fair reduction was obtained at this time, a better reduction would have been secured earlier. Manipulation under anesthesia and a cast sufficed. Two mistakes were made in this case; namely, neglect to secure a roentgenogram at once and delay in reduction. Case 2 (fig. 2) shows a short spiral fracture of the lower end of the tibia. Manipulation and a cast secured a perfect functional result. It is seen that, while the reduction is not anatomically perfect, the tibio-astragaloid joint is held in the position of strength, the patient has been entirely free from all pain in walking, and there is no shortening. If this is not secured, no delay should be lost in performing an open operation and removing any intervening tissues and holding these fragments by means of a small piece of silver wire or kangaroo or chromic gut. The cast should extend well up the thigh.

Fig. 6 (case 5).—*A*, before reduction; *B*, after reduction; *C*, three months later.

Direct skeletal traction with a Steinman pin through or over the os calcis is indicated in such a case as case 3 (fig. 4 *A*), which shows a long oblique fracture of the lower end of the tibia with two fracture lines involving the joint and a part of the upper end of the fibula. Manipulation and a cast proved ineffectual, but direct skeletal traction secured a satisfactory result, as shown in figure 4 *B* and *C*. It is a loss of time to attempt to reduce this type of fracture by skin traction.

While I am not an advocate of open operation in the treatment of fractures, it has certain clear indications; and when they apply to the case, the operation should be performed early and not postponed as a measure of last resort. Delay is not fair to surgery. Hence an unsatisfactory result should not be charged against surgery when dalliance has often made it inevitable. In case 4 there was a spiral fracture of the tibia at the junction of the lower and middle thirds, with a fracture of the external malleolus of the fibula. Unfortunately, the patient was treated in the country for ten days with adhesive strap extension, which, as might have been

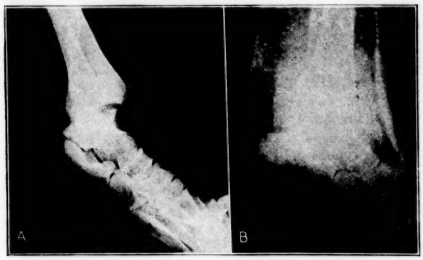


Fig. 9 (case 6).—*A*, before reduction; *B*, after reduction.

expected, proved ineffectual. When I saw the patient, the skin had become irritated from the adhesive tape and required ten more days to heal. At operation, some tissue was found intervening. Even at this date a good approximation was secured and the bones were held in position by kangaroo tendon. While the ultimate functional result was perfect, the recovery would have been hastened by proper treatment at first. Case 5 (fig. 6) shows a comminuted triangular wedge-shape fracture of the anterior surface of the tibia into the joint, with a partial forward dislocation of the foot. Manipulation and a cast would not hold this fragment. An open operation was then clearly indicated. The dislocation of the foot was reduced and the fragment of tibia was replaced and held by a bone peg and the foot placed in partial plantar flexion in a cast extending beyond the knee. Later it was necessary to do a tenotomy of the Achilles tendon to secure dorsiflexion. A stable foot was secured with slight limitation of dorsiflexion.

I believe that these five cases show that each case is not a law unto itself but that there is a standardized method of treatment for these various types.

FRACTURES OF THE ANKLE JOINT

Anatomic Considerations.—The bones entering into the formation of the ankle joint are the lower end of the tibia and fibula and the upper end of the astragalus. This joint can be looked on as a mortise, the tibia forming the roof and mesial border (internal malleolus) and transmitting the body weight; the fibula playing only a minor rôle, contributing the lateral border (external malleolus). The astragulus receives the body weight, and its superior articular convex facet is fashioned to conform to the shape of the ankle mortise. The astragalus, in turn, distributes its weight anteriorly to the scaphoid and posteriorly to the os calcis. Therefore, it may be looked on as the keystone to the arch. Not only does the conformation of the bony elements constitute the strength of the tibio-astragaloid articulation, but the four strong ligamentous bands, known as the anterior, posterior, internal and external ligaments,

which form the capsule, play a leading rôle in this very important joint. The ankle joint is a comparatively tight one and in acute inflammations contains but little effusion. This joint is not only a hinge joint but a weight-bearing joint. In fact, it transmits more weight than any other joint because it is the lowest joint and, therefore, there is more weight above it.

Movements of the Ankle Joint.—The foot moves largely in an anteroposterior plane. The range of motion is usually about 80 degrees, 20 degrees in dorsiflexion and 60 degrees in plantar flexion. This varies, of course, with the individual, the so-called "double jointed" ones having almost twice the excursion as the "string haltered" or inelastic ones. As the foot is brought in extreme plantar flexion, it points slightly outward. The lateral movements of the foot, while playing a less important rôle than the anteroposterior, should be kept constantly in mind in the treatment of injuries in this region. I do not believe that it is generally recognized that these movements, that is, inversion or supination and eversion and pronation, have their axes not in the ankle joint proper but largely in the subastragaloid articulation.

I shall not consume time in describing the part assigned to the tendons, blood vessels and nerves in this region except to emphasize the master rôle played by the Achilles tendon and how it must be dealt with often in order to secure a good anatomic replacement and ultimate maximum function. It must often be severed to secure this result.

Age.—Fracture of the ankle involving the lower end of the tibia or fibula is a very frequent one. In children it occurs rarely, in old age less rarely; but between the ages of 20 to 50 it is a common injury.

Diagnosis.—When there is deformity, the seeing eye will tell much; without deformity, the "seeing finger tip" will tell more than one realizes, and in cases of children may be more valuable than roentgenograms. In all cases, however, of such injuries roentgenograms should always be taken immediately.

Cause.—Indirect violence is the cause of all fractures of this general group.

Varieties.—The classification given by Wilson and Cochrane [2] seems to be the simplest and most satisfactory grouping of these injuries:

1. Fractures by external rotation of the foot.
2. Fractures by abduction (fibular flexion, Pott's fracture, Dupuytren's fracture).
3. Fractures by abduction (tibial flexion, reversed Pott's, inversion type).
4. Fractures by posterior displacement of the foot (Cotton's [3] fracture).

1. *Fracture by External Rotation of the Foot.*—Case 6 (fig. 9) shows this type beautifully. A torsion fracture of the lower end of the fibula was produced, the fracture line running obliquely upward and backward separating the external malleolus from the shaft. The force continued, resulting in a fracture of the internal malleolus and a great rupture of the anterior capsule and a partial dislocation backward of the foot. This occurred in a young woman playing tennis when she made a violent effort to reach for a ball while running. I saw her one hour later and secured a perfect reduction, immobilized in a cast, and a complete functional result was obtained.

2. *Fracture by Abduction of the Foot* (fibular flexion, Pott's fracture, Dupuytren's fracture).—Case 7 was of this type. The internal ligament ruptured, carrying with it the internal malleolus. The force continued, widening the ankle mortise and resulting in a fracture of the shaft of the fibula in its lower third. Manipulation and a cast sufficed.

Of all types of fractures in and about the ankle joint, the one known as Pott's is one of the easiest to treat, and the deformities seen to follow it are the most frequent of all. The reasons for these deformities are twofold: (1) The reduction is insufficient; (2) the after-treatment is neglected by not relieving strain.

3. *Fracture by Adduction* (tibial flexion, reversed Pott's, inversion type).—Case 8 was a compound fracture of this type which required several manipulations to secure a perfect reduction. It occurred in an old man who fell from a great height, sustaining seven fractures and two dislocations. This particular fracture was the least of my worries in his case. Manipulation and a cast sufficed, and he secured a perfect result.

4. *Fracture by Posterior Displacement of the Foot* (Cotton fracture).—Case 9 (fig. 12) shows a complete backward dislocation of the foot, with a splitting wedge-shape fracture of the articular surface of the

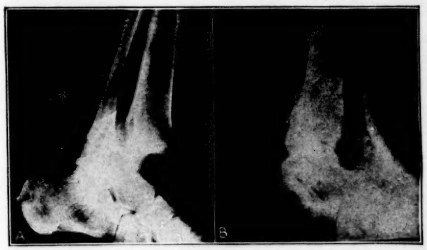


Fig. 12 (case 9).—*A*, before reduction; *B*, after reduction.

posterior portion of the tibia. The triangular wedge has been carried backward with the backward dislocation of the astragalus. This occurred in a man, aged 70, who fell backward, catching his foot on a wire, which resulted in a sudden violent hyperplantar flexion of the foot. Three hours later, under general anesthesia, a perfect reduction was accomplished by the means of (*a*) flexion of the knee to relax the Achilles tendon, and (*b*) traction and countertraction of the ankle and then forward replacement of the foot and immobilization of the leg and foot in dorsiflexion in a cast.

COMMENT

The aim of all therapy should be to expedite complete recovery of function. The chief requisite for good healing and satisfactory function in fractures always has been, still is, and always will be, early and exact reduction. Bancroft's [4] experimental work in rabbits emphasizes what we knew well from clinical experience, and that is that "bone is a living tissue which undergoes adaptation of stresses and strains," and that "a fracture should be reduced immediately with minimal manipulative trauma."

Active and passive movements of small amplitude of the knee and ankle must be begun without much delay.

2. Wilson and Cochrane: Fractures, 1925.
3. Cotton, F. J.: A New Type of Ankle Fracture, J. A. M. A. **64**: 318 (Jan. 23) 1915.
4. Bancroft, F. W.: New York State J. Med. **24**: 827 (Sept.) 1924.

The patient's mind should be focused on the joint and muscles, and he will thereby tone up the leg by sending down voluntary nerve impulses. Heat and gentle massage can do nothing but good. One should not overlook protecting the fracture for a few weeks when the patient begins to walk and to maintain the inversion of the foot. Consolidation is often not complete when we think it is, and protection at this time will prevent shortening.

The causes of unsatisfactory results of fracture treatment, particularly those of the lower end of the tibia, as has been pointed out by von Eiselsberg,[5] are that too little attention is still given to the consideration of the anatomy and physiology of the part. Since the popularization of the treatment of fractures by extension, exact reduction of the fracture has often been neglected. It is folly to sacrifice the attempt at primary reduction for other methods. Until good reposition has been obtained, we should not be satisfied. I have in certain cases made three or four attempts before proper reduction and alinement have been secured. Of course, there are a number of fractures, as I have attempted to point out in this paper, which do not permit primary reduction, lying, as it were, on the border line between fractures requiring conservative or nonoperative treatment and those requiring operative treatment. I have attempted to clarify the method we should use in these various types of cases. The methods to which I refer have been our allies for years. We should not so often leave the fields of tried and proved experience to go romping after the butterflies of untried methods in our desire for the new and more spectacular. Rather we should perfect ourselves more in standardized methods.

Fitzhugh Building.

ABSTRACT OF DISCUSSION

DR. WILLIS C. CAMPBELL, Memphis, Tenn.: No class of surgery is more badly managed than fractures. This is probably due to the fact that we have more fractures than ever before, on account of the great increase in industrial activities and the automobile. There are more cases of extensive contusions of the soft parts and more delayed unions. This is particularly true in fractures of the lower third of the leg. As Dr. Gilcreest states, a large percentage of fractures can be reduced and should be reduced by closed methods and fixation apparatus. It is very important that the proper alinement and proper rotation of the limb be conserved, also the correct relation of the foot to the ankle. Frequently, after fractures of the lower third, there is a backward sagging of the limb. This should be avoided. More care should be taken in alinement of fractures than is being taken at present. The question of skeletal traction is an important one. It has a very limited use, however, and should be confined largely to compound fractures. I have seen a few simple fractures of the lower third of the leg in which fair reduction could not be obtained by closed methods, but fractures should not be opened if we can possibly avoid it. If the fracture is opened, union is more often delayed. There are three types of skeletal traction: the traction by ice tongs through the malleoli, the traction of the Steinman pin over the os calcis, and the traction of the pin through the os calcis. Under no circumstances should we apply ice tongs through the malleoli. It is dangerous, and infection of the ankle joint is both possible and probable. Also, it is unnecessary to pass a Steinman pin through the os calcis. The best methods is to place the pin just above the os calcis and closely approximate it, so there will be no traction on the skin or soft parts.

DR. ISADORE COHN, New Orleans: I should like to call attention to one type of fracture which Dr. Gilcreest did not stress sufficiently and that is the type in which the diagnosis is not made, those cases which are passed over as a so-called sprain, and the patients come back after a prolonged time with disability. They require a great deal of promising and roentgen ray and diathermy and everything else, and they finally have to go round on a bad foot. We are all agreed that there is no place in the body where we need a more perfect reduction than in the ankle, because there is a great weight bearing on the astragalus. A few years ago Skinner of Kansas City called attention to this. As early as 1769, Percival Pott stressed the importance of maintaining the normal tibio-astragaloid relationship. We believe operation is rarely indicated in these cases. For my own part, I do not care to have a Steinman pin stuck in my os calcis, nor do I believe it is necessary in some of these oblique fractures to have bands. It is important that we get these patients on their feet as soon as possible, not with crutches but with a non-weight bearing type of brace. In that way they are self-supporting instead of being dependent on crutches.

DR. DAVID C. STRAUS, Chicago: I fully agree with the author that all fractures should be treated as emergencies and reduced as early and as accurately as possible. In regard to the treatment of fractures of the lower third of the leg, the method I have found useful and adequate in the great majority of cases is the use of the Hawley table as a means of obtaining and maintaining traction while a circular plaster-of-paris cast is being applied. I believe that this type of traction, by means of the Hawley table, will take care of the majority of cases. I have never yet used a Steinman pin in the lower leg fractures. I use it very frequently in fractures of the femur, and some years ago devised a means of using it in recent fractures of the os calcis.

5. Von Eiselsberg: Wien. med. Wchnschr. 74: 1915, 1924.

LATERAL VIEWS OF THE HEART AND AORTA*

SAMUEL BROWN, M.D.
AND
H. B. WEISS, M.D.
CINCINNATI

Clinicians differ regarding the value of percussion of the heart borders. Many feel that accurate determination of the borders is well nigh impossible, especially in the obese and in women, while others maintain that a high degree of accuracy may be obtained by percussion. However, difficulties are recognized when percussion for the heart borders is attempted in persons with greatly enlarged hearts and those having pulmonary emphysema.

With the advent of the roentgen ray, much accurate information has been obtained in determining the borders of the heart. One is now able to learn the position of the heart in relation to the transverse diameter of the thorax. It is also possible, by means of the orthodiagram or teleroentgenogram, to determine to a high degree of accuracy the absolute size of the heart. However, the front view of the heart and aorta fails to give us the position of the heart in its lateral aspect and its relationship to the thorax. It also fails to give us any knowledge of the volume of the heart and the changes each individual chamber may undergo under abnormal conditions. In addition, a thorough study of the aorta cannot be made in the front view. This difficulty arises because of the superposition of several structures that obscure the roentgenogram. The pulmonary tissue in front and in back of the heart is absolutely unavailable for inspection, and we do not

* From the roentgenologic and medical departments of the General and Jewish hospitals.

have any correct idea of the relationship of the several structures that occupy the thorax in the front view.

Some attempts have been made by Vaquez and Bordet and several other observers to determine the changes in the volume of the heart and aorta as revealed on oblique and lateral views, but no attempt has been made to develop the relationship of the heart and aorta to the thorax in the lateral view.

RESULTS OF OBSERVATIONS

During the last two years we have made a study of the heart and aorta and their relationship to the thorax in the lateral view. A study of several hundred thoraces of normal and abnormal persons yielded the information presented here.

1. *Position of the Heart Within the Thorax in the Lateral View* (figs. 1 and 2).—In the lateral view of

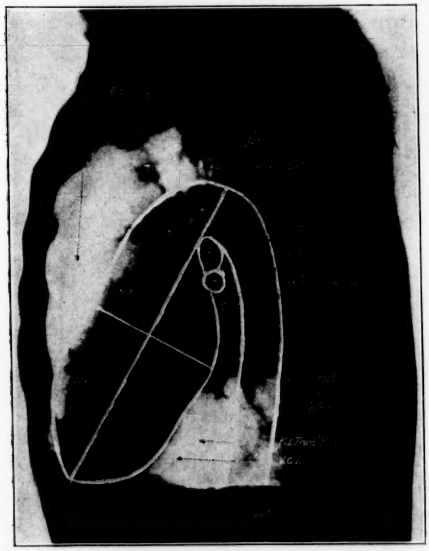


Fig. 1.—Position of normal heart in thorax in lateral view: L. V., left ventricle; L. A., left auricle; R. V., right ventricle; R. A. right auricle; A. S., transparent triangle, anterior superior; P. I., transparent triangle, posterior inferior; L. C. C. A. and S. A., left common carotid artery and subclavian artery.

the thorax, the heart is seen to be placed obliquely. The apex of the heart is directed downward and forward, and the base is directed upward and backward. The degree of obliquity depends on the state of the lung and the position of the diaphragm. We find that the higher the diaphragm, the more oblique is the position of the heart in the lateral view of the thorax. Under normal conditions we have observed that the lower portion of the anterior border of the heart is in contact with the anterior wall of the chest, which corresponds on percussion to the area of superficial dulness.

2. *Lateral Configuration of the Heart and Its Chambers* (figs. 1 and 2).—In the lateral view, the configuration of the heart shadows is oval. The lower pole of this oval points downward and forward and corresponds to the apex of the heart. The upper pole points upward and backward and corresponds to the arch of

Fig. 2.—Same patient as in figure 1; no heart tracings; vertical line divides thorax into two equal parts; heart lies in anterior half.

Fig. 3.—Lung following injection of iodized oil, demonstrating ringlike shadow of left bronchus. Its position above the base of the heart and below the arch of the aorta should be noted.

the aorta. The base of the heart is not sharply defined, but on close observation one may recognize a ringlike shadow produced by the left bronchus (fig. 3). The

position of this bronchus is known to be above the base of the heart and below the arch of the aorta.

The individual chambers of the heart can be outlined by drawing a line between the two poles. This line divides the heart into approximately two equal parts. The anterior half corresponds to the so-called right side of the heart, and the posterior half corresponds

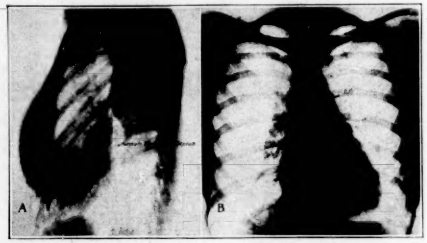


Fig. 4.—*A*, indentation between left auricle and ventricle; bulging of left ventricle; *B*, prominence of left ventricular curve in front view.

to the so-called left side of the heart. A line drawn at right angles to the median line midway between the poles will approximately divide the ventricles below from the auricles and aorta above. With a knowledge of the relative position of the chambers, changes in size of any one of them can be determined to a large degree. At times a definite indentation (fig. 4 *A*) is seen between the left auricle and the left ventricle, especially when the latter is enlarged. As in the front view, a dilatation of any chamber will produce an alteration of the normal oval configuration. In a mitral lesion, the oval configuration assumes a more globular shape as a result of enlargement of the left side of the heart (fig. 5 *A*). In generalized enlargement of the heart, the shadow of the right ventricle is also enlarged (fig. 5 *A* and *B*). In aortic regurgitation, the lower posterior curve becomes especially conspicuous.

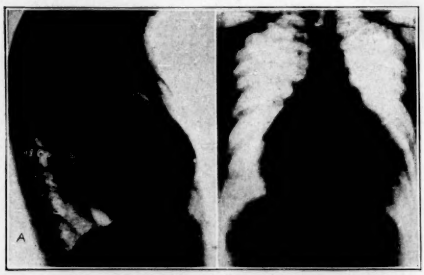


Fig. 5.—*A*, lateral view of generalized enlargement of the heart: The posterior border of the heart reaches the spine; it is globular. *B*, front view of generalized enlargement of heart.

3. *Situation of the Heart in the Thorax.*—When a line is drawn midway between the ventral and the dorsal walls of the thorax, it will divide the thorax into two parts (figs. 1 and 2). Under normal conditions, the heart will be found to be situated in the anterior half of the thorax. If, however, there is enlargement of the heart, the posterior border will be found to extend beyond the midline. In marked enlargement, the posterior border of the heart may even reach the dorsal vertebrae (fig. 5 *A*).

4. *Presence of Two Transparent Triangles of Lung Tissue and Their Relationship to Lateral Shadow of Heart.*—The oblique position of the heart in the lateral view of the thorax forms two transparent triangles. One is located above, in front of the anterior surface of the heart and large blood vessels, and is called the anterior superior (A-S) transparent triangle (figs. 1 and 6). The other is located in the retrocardiac space, and is called the posterior inferior (P-I) transparent triangle. The size of the triangle depends on the condition of the lung, heart and aorta. The triangles are increased on inspiration and decreased on expiration. They are more or less permanently enlarged in emphysema (fig. 6), or they may be partly or completely obliterated by changes in the heart or the lungs. The A-S transparent triangle is often found to be obliterated by dilatation of the ascending portion of the

Fig. 6.—Lateral view of heart in chest with emphysema: There is increase in size of the anterior superior and posterior inferior transparent triangles.

aorta (fig. 7 *A*), or an aneurysm arising from this part of the aorta, general enlargement of the heart, and pericardial effusion. Tumors of the anterior mediastinum or pulmonary infiltration will also obscure this triangle. The P-I triangle may be obliterated by general enlargement of the heart (fig. 5 *A*), especially that of the left ventricle, pericardial effusion, pleural effusions or pulmonary infiltration.

5. *Relation of the Thoracic Aorta to the Heart, Sternum and Spine.*—In the front view there is seen a superposition of portions of the aorta as well as all the structures between the dorsal and ventral walls of the thorax. It is evident that a study of the aorta in this position is not very satisfactory. On the other hand, the lateral view lends itself readily to a more thorough examination of the aorta by eliminating to a large degree the overlapping and superposition of the various structures. We find that one can usually trace the aorta from its origin to the diaphragm in most of the lateral films (figs. 1 and 2). Any general or local dilatation can be readily seen (fig. 8 *A* and *B*). Loss of parallelism of the aortic borders is easily recognized.

The presence of atheromatous changes is evidenced by an increase in the density of the aortic shadow (fig. 9 *A* and *B*).

The position of an aneurysm can be determined with great accuracy (fig. 10 *A* and *B*). It was found that there is a definite relationship between the descending portion of the aorta and the spine. Under normal conditions the descending portion is usually found in front of the anterior surface of the dorsal spine. In dilatation or displacement, the aorta is found to overlap the bodies of the vertebrae with varying degrees (fig. 9 *A* and *B*). Also under normal conditions we find a constant relationship between the ascending portion of the aorta and sternum by the

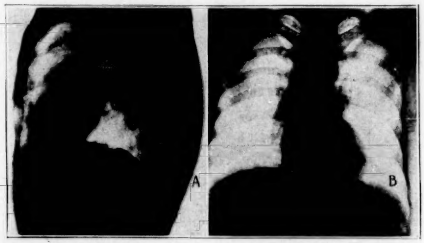


Fig. 7.—*A*, obliteration of anterior superior triangle by dilated ascending aorta; *B*, front view: slight dilatation of aorta.

presence of the A-S transparent triangle. Alterations of this triangle will depend on the degree of dilatation of the ascending portion of the aorta. There is also a constant relationship between the heart and the aorta. Under normal conditions, the posterior border of the heart does not touch the descending portion of the aorta unless the heart is markedly enlarged.

TECHNIC

The technic is simple. It is absolutely essential to obtain a true lateral view in order to observe properly

Fig. 8.—*A*, dilated ascending portion of aorta; obliterated anterior superior triangle; overlapping of spine by descending portion of aorta. *B*, anterior view showing marked dilatation of aorta.

the normal relationship of the thoracic structures and any deviation from the normal.

Since we are here interested in relative values, a lateral teleroentgenogram is not essential. The patient is placed with the left side toward the film in either the erect or the prone position with the arms elevated above the head. The target of the tube is centered to the middle of the thorax on the opposite side, and an exposure of from half a second to one and one-half seconds is made, depending on the size of the person. The usual distance that is used between the film and the target is 3½ feet. At 7 feet the length of the exposure is doubled or tripled. We do not use more

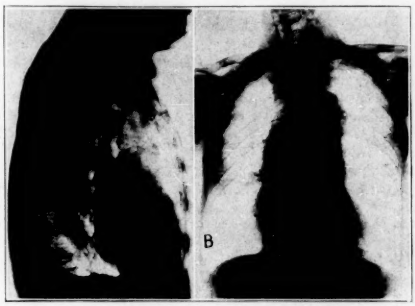


Fig. 9.—*A*, lateral view of atheromatous aorta; dilatation of ascending portion of aorta; overlapping of spine by descending portion of aorta. *B*, front view, showing dilated aorta.

than from 20 to 30 milliamperes, and not more than a 5 to 6 inch spark gap.

CONCLUSIONS

The lateral view of the thorax enables one to learn that:

1. The position of the heart in the lateral view of the thorax is oblique.

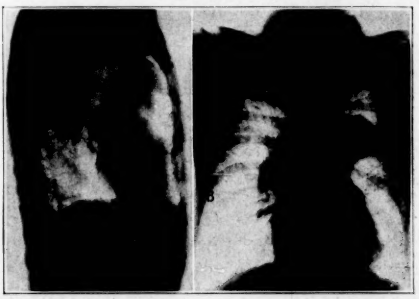


Fig. 10.—*A*, lateral view showing shadow of aneurysm; atheromatous changes in periphery of aneurysm; obliteration of anterior superior triangle. *B*, front view of aneurysm.

2. The configuration of the heart shadow is oval. Changes in the volume of the heart and of the individual chambers can be recognized.

3. The heart is located in the anterior half of the thorax.

4. There are two transparent triangles due to lung tissue, one situated in front and one in the back of the heart.

5. There is definite relationship of the heart to the aorta, and of the heart and aorta to the thorax.

19 Garfield Place.

WIRING WITH ELECTROLYSIS IN SACCULAR ANEURYSM

HOBART AMORY HARE, M.D.
PHILADELPHIA

In this article I report two additional cases of aneurysm of the thoracic aorta treated by wiring with electrolysis, and in addition make note of certain points in the technic of the procedure. As a result of thirty-six such operations, a number of points have arisen which deserve emphasis, the more so because at various times cases have been referred to me which were not suitable for the wiring operation, or instances have been reported to me in which failure occurred because of error in technic.

REPORT OF CASES

CASE 1.—E. J. S., a man, aged 40, admitted to the Jefferson Medical College Hospital, March 15, 1926, complained of excessive pain in and about the left scapula, radiating down the left arm and down the back as well. This pain had been so severe that he had been receiving up to 2 grains (0.13 Gm.) of morphine daily for some time. Anteriorly over the left side of the chest from the second to the fourth ribs, there was a definite swelling with definite expansile pulsation and a thrill. There was also a bruit, systolic in point of time. The cardiac sounds were normal, the radial pulses synchronous, and the blood pressure in the arms showed practically no difference between the right and the left. The roentgen-ray examination confirmed the diagnosis of aneurysm of the last portion of the transverse and the beginning of the descending arch. The growth steadily increased in size, and as the pain required more and more morphine, I decided to operate. This was done, April 5. Fifteen feet of wire made of platinum, 30 per cent, and gold, 70 per cent, was inserted at the point of greatest pulsation through an insulated needle, and 5 milliamperes of electricity was turned on at 2:40 p. m. Each three minutes the milliamperes were increased by 5 until a total of 45 was reached, at which point the current was maintained for ten minutes, after which it was cut down in steps of 5 milliamperes every three minutes until it was shut off. The patient expressed himself as being largely relieved of pain immediately after the operation, and the degree of expansile pulsation was notably decreased. It was not possible to dispense with morphine, because the patient had had it so long that he could not do without it, and it was not thought safe to attempt its withdrawal. His local and general condition continued to improve, but on May 19 his speech became slurring and he became drowsy, the right pupil dilated three times the size of the left, and on the 28th my neurologic colleague, Dr. Strecker, decided that the symptoms were those of syphilitic involvement of the bulb. He died, May 29, in coma.

Fig. 1 (case 1).—Lateral view showing wire coiled in sac, whereas if the wire had not been so stiff it would have been snarled and the strands would not have pressed on the walls of the sac.

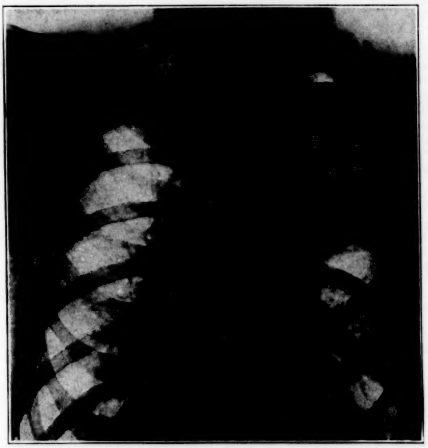


Fig. 2 (case 1).—Anteroposterior view of the aneurysm taken before operation, showing no fusiform dilatation of ascending arch, in contrast to the dilatation shown in figure 3.

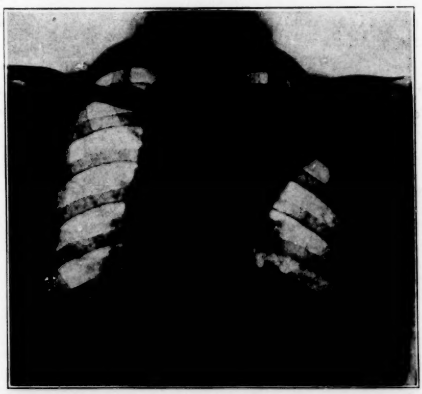


Fig. 3 (case 3).—If this is compared with figure 2, it will be seen that the ascending aorta is greatly enlarged and definitely fusiform, thereby making an operation inadvisable.

So far as the aneurysm was concerned, the operation was a success because it partially controlled the growth and relieved the pain; but it failed to arrest the growth to the extent desired for the reason given below.

Figure 1 shows the position of the wire in the sac. Its interest lies in the fact that the wire is coiled in a manner that is improper. It has rings like a coiled spring, and is not in a tangled mass, which would accelerate proper clotting. I learned that the wire was not properly made, and rigid because of too much platinum.

CASE 2.—W. M., a man, aged 59, complained of pain in the anterior part of the chest, and stated that he had noticed a lump in the chest wall three weeks previously which had been increasing in size. There was a heaving impulse over this mass, which extended upward to the sternoclavicular junction, and as far down as the fourth interspace. Laterally, it extended to the left four fingers width from the midsternal line, and two fingers breadth to the right of the sternum. The roentgen-ray report stated that there was a large aneurysm of the transverse and descending aorta with one large sac projecting backward and another forward, the latter pushing through the chest wall. As the pain increased, as well as the size of the tumor, the patient was operated on by wiring and electrolysis, October 15. Twenty feet of gold-platinum wire of 27 gage was introduced, and the electric current, starting at 5 milliamperes, was turned on, increasing 5 milliamperes every five minutes up to 45 milliamperes, when it was gradually cut down in steps of 5, so that in all the current passed during one hour. There was at once marked relief from pain, which continued up to a few days before death, which took place two months after the operation because of a rupture of the posterior sac into the esophagus.

The gain in this case was the control of pain, and the arrest of the rapidity of growth anteriorly. The ultimate fatal ending was due to the rupture of the posterior sac, which could not be reached. It may be said that partially occluding the anterior sac increased the strain on the walls of the posterior sac. This, however, is impossible to determine. The double lesion made the case a desperate one, justifying any attempt at relief. The errors in this case lay in the introduction of the needle too deeply and too much toward the middle line, so that the wire failed to cause either sac to become properly filled with clot, and in the use of wire with too high a platinum content, which caused it to coil and not to snarl.

CASE 3.—A woman, suffering from severe dysnea, presented the physical signs of, and the roentgenogram showed, an aneurysm of the latter part of the transverse and descending aorta. She had suffered from thoracic pain with gradually increasing dyspnea for twelve years. The patient had heard of the operation of wiring and electrolysis, and she came with the hope that it would give relief. This object could not be obtained, in my opinion, because the roentgenogram showed (fig. 3), in addition to the sacculated aneurysm already described, that the whole ascending aorta was suffering from a large fusiform dilatation which, of course, could not be wired because of its shape; and I believed that the wiring of the sac would result in a further stretching of the proximal dilated area with fatal results. If the sac had been projecting forward and protruding through the chest wall, then its further progress would have been very properly attacked by operative measures, because the greatest danger lay in the sacculated area. As this was not the case, operation was refused; the patient left the hospital and has been lost to observation.

COMMENT

The points I would emphasize are as follows:

1. Only sacculated aneurysms are suitable for wiring and electrolysis, because blocking of the whole channel in the case of fusiform aneurysms will cause disaster.

2. The more sharply defined the sac, the better is the chance of a good result; and this is especially true in those instances in which the sac is attached to a vessel otherwise not much dilated, if at all.

3. This procedure is to be resorted to in the so-called false aneurysm if it is pulsating and growing.

4. It is contraindicated as a rule if more than one aneurysm is shown by the roentgenogram to exist, because the deflection of the blood current from one sac may increase the strain on the other sac. This holds only if the sac wired is distal to the other sac, or if they are back to back.

5. Wiring and electrolysis is contraindicated if the sac is distal to a large fusiform formation of the vessel.

6. It is obvious that if the arterial tree is often in an advanced stage of degeneration, the proposition is like mending a rotten piece of hose.

7. When there is a syphilitic history, it is a nice question whether the iodides should be used after operation, since they may be as active in preventing the early organization of the clot as they are in opposing the underlying condition. My preference is for mercury.

8. The wire must be wound on a small spool, so that it will coil in the sac in small snarls.

9. It is of vital importance that the wire used have only enough stiffness to enable the operator to push it through the needle. If too stiff, it will not coil in snarls but like a clock spring, and so offer less surface for clotting.

10. If a stiff wire is used, it will by the expansion of its coils stretch the sac and even ulcerate through it. I know of one instance in which fine piano wire was used and produced this result.

11. If gold-copper wire is employed, the copper will be eroded by the electrolytic action and break off before the operation is completed.

12. Platinum-gold-silver wire is the only type to use. If too much platinum is in the wire, it will have too much spring.

13. The best wire is one of 0.014 gage made of platinum, 10 per cent; gold, 60 per cent, and silver, 30 per cent.

14. Silver wire will not coil.

15. The needle should be thoroughly insulated so as not to destroy the tissues by electrolysis where it passes through them.

16. Street current should not be employed, for even if the operating table and operator and his assistants are insulated by having rubber shoes, any failure of the current or its momentary stopping may cause a shock. Several dry cells, usually about six or eight controlled by a rheostat, are sufficient, and the amount of current should be measured by a milliampere meter.

17. The current used should never exceed 50 milliamperes, as an excess of this figure will practically cook the tissues.

18. The question may be asked, What is the chief gain by this procedure? The answer is that there is an almost complete amelioration of pain. If the wire is fortunately placed, at least a temporary arrest of the growth occurs. In one patient life was preserved for nine years, although he earned a livelihood by labor. Indeed, this man very foolishly walked from Philadelphia to Trenton, N. J., a distance of about 30 miles, within a month of his operation.

19. Last of all, one should beware of gumma of the chest wall, or of the thoracic tissues, which has a transmitted pulsation, and shows in the roentgenogram as a

mass forming part of the aorta, when in reality it overlies that vessel.

It is interesting to note that the cases which have given the best results have been those in which the aneurysm had already projected through the chest wall, the skin over it being already discolored or weeping pink serum. Perhaps these results were due to a more accurate placing of the coils of wire in the sac.

Spruce and Eighteenth streets.

RADIUM IN OPHTHALMOLOGY

A FURTHER STUDY, EXPERIMENTAL AND CLINICAL *

LAURA A. LANE, M.D.
BALTIMORE

At the 1924 meeting of this section, attention was called to the use of radium in benign affections of the eye,[1] and mention was made of the need of research as to screening, dosage, the effect on intra-ocular tension and further clinical study. A plea was made for more careful reporting of cases in which radium was used.

Again I make this plea for the sake of future sufferers with glioma when radium and the roentgen ray appear to offer some spark of hope, for those with corneal opacities, tuberculous keratitis, keratoconus and trachoma which destroy vision as well as for those with many other intractable lesions of the eye in which radium appears to offer a considerable measure of relief. Let us accurately state just what we do when we use radium. By this means only can we gather accurate scientific information as to the best methods of using radium, and also determine its status in ophthalmic therapeutics.

NEED OF RESEARCH AND CLINICAL OBSERVATION

Earlier literature is extremely chaotic as to data on the type of screening, dosage and the manner of application of radium in eye cases. Much of the experimental work done with radium on the eye was previous to 1914 with small amounts of radium, small series of animals, and very short periods of observation. Types of screens and knowledge of the effect of radium have changed materially in recent years, so that these earlier observations are far from being of practical help now. Meisner's [2] recent work, done with thorium X, while extremely interesting, does not give us exact data as to what material was used for screens or exact distances, and its application into the vitreous is not, of course, adapted to treatment of tumors of the human eye, as Meisner himself admits.

In perusing the literature of the last two years with reference to radium in ophthalmology, with few exceptions, one derives little help on these points. In fact, most articles are conspicuously lacking in complete details. One article is almost a plagiarism, with the addition of a few clinical cases. Several others are pessimistic as to any good from radium therapy in the eye. Corbett [3] reports no results in several lesions in which others as well as I have had excellent success. Evidently distance or how to deliver a given dose to certain parts of the eye mean little to some users of radium. We must keep constantly before us the fact that the intensity of radium varies inversely as the square of the distance.

UNIFORM DATA ESSENTIAL

If radium therapy is to progress and give maximum results and safety to the patient, exact data must obtain. By this is meant (1) careful description and diagnosis of the lesion treated; (2) exact data as to the amount of radium used; (3) whether radium element or radium emanation was employed (4) the type of container of the radium and its thickness (plaque, steel needle, silver capsule, platinum needle, etc.); (5) the kind of material and thickness of filters used; (6) the duration of the exposure; (7) if repeated, at what intervals; (8) the distance at which it was applied; (9) where and how it was applied, and (10) the total dosage used.

It does not appear possible to work out as satisfactory curves for dosage to any particular part of the eye as Weatherwax [4] and others have been able to do in the use of the roentgen ray and radium in other parts of the body. The problem of the anatomic make-up of the eye, the various differences in composition of the media and the density of the normal eye tissues do not lend themselves readily to such accurate computations.

Long, painstaking study, experimental and clinical, of the action of radium under favorable conditions for accurate scientific observation by those qualified for such work is needed today. Fuller knowledge of the physical, biologic and chemical changes produced in the aqueous and vitreous in normal and pathologic eyes is necessary. Clinical microscopy will give us much surer aid than we have had heretofore in determining the effect of radium on the eye.

EXPERIMENTAL STUDY

I have devoted a year to an experimental study of the effect of radon (radium emanation) on the normal eye, and also to a clinical study of the effect of radium on various eye affections, using radium element in some and emanation in others. In the experimental work, particular attention has been paid to (1) dosage, (2) screening, (3) immediate and remote clinical changes, (4) effect of radium on the intra-ocular tension, and (5) histologic changes. In every way possible this study has taken into consideration the practical application of radium so that results could be in general applied to the human eye if the findings seemed to warrant such application. Some of these will be pointed out as the study proceeds.

Rabbits were used throughout the experiments. In the first series (silver tubes) I myself was unable to select the rabbits, but in all the other series including the duplicate animals, care was taken in obtaining rabbits from known stock, with similar weight, age, and apparently normal and similarly marked fundi. Selection of rabbits, study of the eyegrounds, and methods of applying the radium have all been kept as constant as possible. All rabbits except the first series have been kept under observation and the fundi and tensions studied from five to seven days or more before applying radium.

* Read before the Section on Ophthalmology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints.

* This study was made possible by a grant from the Knapp Testimonial Fund of the Section on Ophthalmology of the American Medical Association, the use of radon and other valuable assistance from the Philadelphia General Hospital, clinical material and cooperation of the staff of Wills Eye Hospital, and the use of a slit lamp and valuable laboratory assistance from the Polyclinic Hospital of the Graduate School of the University of Pennsylvania.

1. Lane, Laura A.: Radium in Ophthalmology, J. A. M. A. **83**: 1838 (Dec. 6) 1924.

2. Meisner, W.: Ber. Deutsch. ophth. Gesellsch. Heidelberg. **44**: 172, 1924.

3. Corbett, J. J.: Med. Rev. of Rev. **31**: 337, 1925; Boston M. & S. J. **190**: 1124 (June 26) 1924.

4. Weatherwax, J. L.: Am. J. Roentgenol., to be published.

Radium was applied to one eye only, the other acting as a control. In addition, in each series two untreated control rabbits were carried throughout the experiments. Numerous observations with the slit lamp have been made on each series.

Tension.—The problem of tension and the use of radium in reducing the same is of sufficient importance to demand a few words. Wickham and Degrais,[5] in 1906, treated a glaucoma patient with filtered radium with no permanent result; there was very slight improvement for a short time. In 1918, Cutler[6] reported the use of radium in a patient who refused operation. There was some reduction of tension. Ryerson,[7] in 1911, mentioned that there is no permanent reduction of tension in chronic glaucoma. Fernandez,[8] in 1922, reported a patient under observation and treatment with radium for a year; he concluded that radium neither provoked nor helped the glaucoma but did give some benefit in a cataract of the other eye. Corbett[3] reports five cases, in only one of which tonometer readings were taken and actual decrease shown, but the decrease was not permanent. He says: "It must be admitted that it has the power to produce this all important effect; namely, the lowering of intra-ocular tension." Lederer[9] in a brief abstract states that inhalations of dry air saturated radium emanations caused a fairly regular decrease of tension in acute glaucoma and slight effect in absolute glaucoma. On the other hand, in the moist chamber he got an increase. He does not know the cause for these differences. He feels that further observation should be made before applying it therapeutically. No data as to amounts used or whether intravenous injection or radium emanation charged water are meant by the term moist or wet are given in the abstract.

If time permitted, several references from the literature could be cited to show that glaucoma has followed the use of radium and the roentgen ray. We must have much more conclusive evidence than what is at present found in the literature to make it safe to apply radium in glaucoma. That relief from pain and congestion might take place after the use of radium in glaucoma is admitted, since I have used it in severe iridocyclitis and uveitis several times with beneficial results. The problem of glaucoma is a very complex one, involving colloidal, chemical and other metabolic changes of which as yet we have very little knowledge, particularly in the field of ophthalmology. In the hope that radium might have some definite effect in reducing tension, I have undertaken quite extensive experiments. This hope has in no way been fulfilled; on the contrary, radium to the rabbit eye seems to act as a decided irritant, particularly in the bare tube experiments, causing considerable increase of tension as will be seen by the charts.

At first there was some difficulty in finding a suitable tonometer adapted to the curvature of the rabbit cornea. The curvature is much greater than in the human cornea; therefore the foot plate of the Schiötz, Gradle and McLean instruments are not adapted for use in the rabbit eye without some modification of the foot plate. It was necessary to discard our first readings on this account. To Dr. John Green of St. Louis I am indebted for the suggestion of using the Souter[10] tonometer. This instrument is admirably adapted to this work, having a foot plate less than 2 mm. in diameter. It is easily read by artificial light thrown on the cornea with a head mirror, the readings being taken at the first dimpling of the cornea. In the experiments, three readings were taken at each observation and the average was charted. Several hundred readings have been taken. Tensions have been taken for several days before applying the radium, so that an idea of the normal curve might be established for a given rabbit. After the application of the radium at regular intervals of twenty-four hours for one week, readings have been taken and also once a month after completing the radium applications during the period of observation.

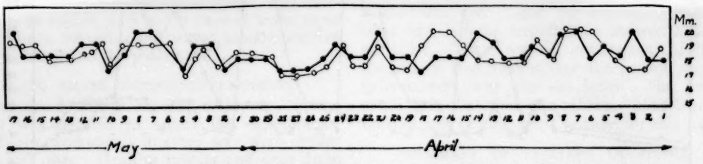


Chart 1.—Tonometer readings of normal untreated control: heavy line, right eye; light line, left eye.

The control readings (chart 1) and those taken before radium was applied have not been in exact accord with the recent report of Boyden,[11] who found the average normal tension of rabbit eyes as ranging from 24 to 27 mm. with the Schiötz instrument. I have had the opportunity of communicating with Drs. Souter and Verhoeff, who standardized the Souter tonometer on rabbit eyes, and learn that they found the tension of rabbits to vary from 15 to about 20 mm., with some findings even lower. Our average readings were between 18 and 20 mm. in one year old rabbits. We are inclined to the view that considerable more study of the tension of normal rabbits' eyes is needed before it can be assumed that 78.3 per cent lie within the range of 25 to 26 mm. The charts that accompany this study give characteristic effects of radium on the tension. Only once did a reduction of tension occur, and that was in rabbit 16 of the heavily filtered gamma series of experiments.

EXPERIMENTS WITH SILVER TUBES

Method of Using.—Ordinary silver tubes, 14 mm. long and 0.5 mm. thick, such as are commonly employed in radium emanation work, were used. The tubes were covered with 1 mm. of rubber dental dam to cut out secondary radiations. The rabbit was held stationary in its normal sitting position and the lids held apart so the cornea was fully exposed. In the 15, 25 and 50 millicurie doses the method of application consisted in

5. Wickham and Degrais: Radium Therapy, New York, Funk and Wagnalls, 1907, p. 277.
6. Cutler, C. W.: Arch. Ophth. **47**: 512, 1918, discussion.
7. Ryerson, G. S.: Canad. M. A. J. **1**: 1185, 1911.
8. Fernandez, R.: J. Philippine Islands M. A. **2**: 116 (May-June) 1922.
9. Lederer: Klin. Monatsbl. f. Augenh. **74**: 785, 1925.
10. Souter, W. N.: Ophth. Rec. **25**: 80 (Feb.) 1916.
11. Boyden, M. G.: Amer. J. Ophth. **8**: 40 (Jan.) 1925.

grasping one end of the tube in a pair of forceps and passing the applicator over the cornea at a distance of 2 mm. from its surface. Care was taken to keep the distance exact as possible and the duration and interval constant.

The area treated and the method of application in the smaller doses has been similar to that used in human eyes affected with ulcers, interstitial keratitis, opacities and pannus.

In the experiments using 100, 150 and 200 millicuries, the method of application has been different. Use was made of the third eyelid, which projects in a tongue like manner toward the cornea, in some rabbits even on the cornea. The thickness and extent is not unlike pterygiums and growths of the conjunctiva. As radium has been used in such conditions sometimes with good results and at other times adversely, we have given this part of the eye some attention in our experiments. The tubes, held firmly in an adjustable applicator stand, were applied over the third eyelid area of the eye. The rabbit's head was held securely and the applicator brought to within the required distance of 2 mm. of the exposed eye.

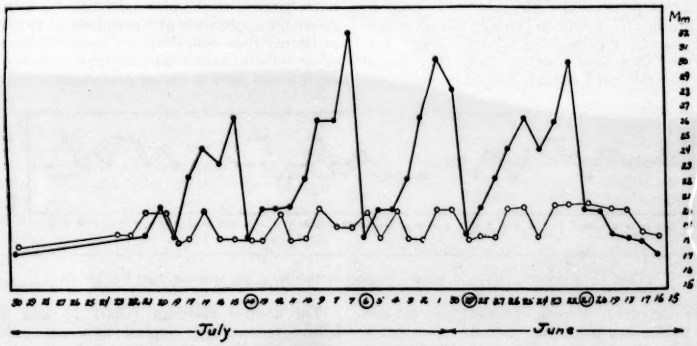


Chart 2.—Silver tube experiment: tonometer readings of duplicate rabbit 1; heavy line, left, irradiated eye; light line, right, unirradiated eye; dose, 15 mc.; circles, date of application of radium.

HISTOLOGIC FINDINGS

Histologic examination of the irradiated and unirradiated eyes have been made of every rabbit in each series as well as of extra controls. About 800 specimens from different levels were made, special stains being used in many of the nerve levels. In some respects the findings are disappointing with regard to suggesting definite conclusions as to whether certain pathologic conditions found in the nerve and retina were entirely due to radium or to chronic infection in other parts of the body. Some of the preparations have been submitted to trained eye pathologists, and they too were unable to make a definite decision on some of the points in question.

As an example, a control rabbit had appeared to remain in perfect condition except for a slight upset apparently due to feeding during the second month of observation. This was accompanied by slight moisture in the nose. The whole indisposition passed off in four days. The rabbit made a steady gain in weight and at no time until the eight month was any ophthalmoscopic change noted. Then the vessels became overfull, particularly the veins, and a gradual tendency for the temporal and nasal vessels to approach became visible. The medullations thinned and lost their color markings.

At necropsy the lungs showed considerable mottling. The liver was very heavy, its surface rough and granular; toward the edge, firm, constricting areas as if seared by an iron were found. A well marked cirrhosis in all lobes was present. No change in any other organ except the appendix was found; several well defined yellowish spots, just under the mucosa were seen.

Microscopic examination showed several areas of chronic inflammation in the lungs, nontuberculous in type. The liver showed extensive changes characteristic of a cirrhosis, the kidneys some slight evidence of chronic irritation, and the appendix numerous well defined areas of chronic inflammation such as are found in the human subject.

The eyes showed no changes in the cornea or sclera. The iris in each presented several small foci of chronic inflammation. The choroid was apparently normal; also the lens. The retina presented numerous areas of degeneration in the ganglion cell layer; also slight changes in the nuclear layers. The papilla had numerous hyaline areas or vacuoles; the nerve substance showed many of these vacuoles and evidence of beginning degeneration and atrophy. The specimens were well fixed, and all the findings cannot be attributed to postmortem changes. There was little difference in the two eyes. Many of these changes were present in some of the other irradiated and unirradiated eyes in which we had observed no definite gross changes in any organ at necropsy. In still others there had not been the slightest evidences of snuffles or other illness, yet degenerative changes in the eyes were found.

I am forced to conclude that further investigation done under more rigid conditions than was possible in these experiments, excluding every possible source of cross infection from other infected experimental animals, with more rigid control of the feeding and more definite knowledge of the stock, are essential before definite conclusions can be drawn on this point of change in the retina and nerve from radium. It appears that the rabbit eye is exceedingly sensitive to changes in its physical condition, especially chronic infections elsewhere in its body.

On the other hand, the corneal changes due to radium were easily demonstrated; also the changes in the vessel walls on the irradiated side of the iris. In the 15 and 25

millicurie doses, with silver screens, very little change was seen in any eye structure except a few small areas of polymorphonuclear infiltration in the iris of each rabbit, evidently small foci of chronic irritation. Changes in the retina and nerve were extremely slight and confined to small areas of degeneration in the ganglion cell layer, with an occasional vacuole in the nerve.

In the 50 and 100 millicurie doses, the cornea showed more definite changes, consisting of slight unevenness of the epithelium in the irradiated area, also some thickening of the substantia propria, with slight increase in the fixed cell elements. In the larger doses, the cornea has shown a wavy appearance not evident in the unirradiated eye. In the 150 and 200 millicurie doses there were found numerous fine deposits of pigment rather superficially located in the substantia propria. In all eyes irradiated with doses above 50 millicuries there has been found many fine, dustlike deposits of degenerated pigment in the iris and ciliary body. The lumen of the vessels was either obliterated or showed an increase in the vessel walls of connective tissue.

Marked changes in the ganglion cell layer, degenerative in character, with some degeneration of the outer nuclear layer and more or less destruction of the limiting membrane and the reticular layer, also of the rods and cones, was present in rabbits 3 (50 mc.), 4 (100 mc.), 5 (150 mc.) and 6 (200 mc.). The nerve likewise presented signs of degeneration and atrophy. The unirradiated eyes of rabbits 4, 5 and 6 showed some signs of degeneration in the retina and nerves, mostly confined to the ganglion cell and the papilla area.

DUPLICATE SILVER SCREEN EXPERIMENTS

When rabbits 1 and 6 showed evidences of lens changes, it was decided to repeat the experiments. These duplicate experiments in every way were similar to the original ones. Healthy rabbits and ones from known stock which appeared to eat more normally like those of the other series then under observation were selected. None of these rabbits showed any lens changes.

The duplicate of rabbit 1, known as rabbit 25, showed little reaction and no external manifestations and some rise of tension (chart 2) after each dose. The fundus of the irradiated eye showed no changes until the fourth month, when there was some hyperemia. This was accounted for by the fact that this rabbit had been injured about the head on the side opposite the irradiated eye. It developed a large abscess on the temporal side of the orbit, which caused some pressure on the unirradiated eye; also exophthalmos. About a month later, when the rabbit appeared to be recovering and the irradiated eye seemed normal again, it suddenly stopped eating, and had to be chloroformed. The eyes were removed back to the chiasm. In tracing the abscess it was found that it communicated with a small extradural abscess through an eroded area of bone in the side of the skull. Necropsy showed slight inflammatory changes in the lungs, and very slight roughness of the surface of the liver, but no other gross changes except a complete intussusception of about six inches of small intestine, which was gangrenous.

The microscopic examination of the irradiated eye showed no changes except some slight polymorphonuclear infiltration about the nerve sheath at the chiasm end. Cornea, sclera, iris, lens and choroid were normal, and the changes in the retina and nerve almost nil. The unirradiated eye showed some change in the cornea and the nerve, and the retina some degeneration but not extensive. There was some infiltration about the sheath of the nerve and surrounding orbital tissue. There was no lens change.

A second duplicate experiment was started after the accident to rabbit 25. The animal has been under observation over five months, and no evidences of lenticular opacity have been seen. It has been examined by colleagues at Wills Hospital with the slit lamp, and no evidence of corneal, iris or lens change found.

A duplicate experiment similar to that of rabbit 6 was started with rabbit 23. This rabbit showed considerable reaction, with marked delay in the reaction time. There were decided changes in the cornea, lids and conjunctiva, and there was considerable hyperemia of the fundus of the irradiated eye. The media were hazy. About the fifth week some overfulness and tortuosity of the vessels appeared. The tension was moderately elevated. This rabbit was under observation only six weeks, when it was lost in an unfortunate accident. Postmortem changes were too great in the eyes to make microscopic examination of any value. No lens changes had been noted.

A second duplicate experiment was begun. This animal, rabbit 29, is still under observation. It had a moderately severe reaction. The cornea became hazy early. The vessels on the temporal side were exceedingly tortuous and full. The disk took on a slightly grayish color and later became paler than in the unirradiated eye. Later the tortuosity became somewhat less, but the medullations showed a dirty faded out color. There was no involvement of the lens at the end of five months, but the cornea showed some indistinctness with the slit lamp. The tension rose much as in the other two rabbits. Histologic preparations cannot be completed in time for this paper.

SUMMARY OF FINDINGS IN SILVER TUBE EXPERIMENTS

1. There have been no permanent injurious manifestations clearly due to radium alone from 15 and 25 millicurie silver tubes screened with 1 mm. of rubber used for ten minutes once a week at 2 mm. distance.

2. Doses of 50 and 100 millicuries used under similar conditions except as to time and interval have shown more or less reaction and changes in the lids, conjunctiva, cornea and fundus. Histologic changes were present in the cornea, iris, retina and nerve; but somewhat similar changes were seen in the retina and nerve of the unirradiated eye.

3. In the 150 and 200 millicurie doses there has been a tendency to delayed reaction and it has been moderately severe. Lids, cornea, iris and fundus structures have shown changes clinically and histologically.

4. Well defined cataracts, in irradiated and unirradiated eyes of rabbits 1 and 6 occurred. The condition of these rabbits was poor. Each had snuffles and showed changes in the blood. Each was eccentric in its selection of food. Each, when the general condition improved and the diet was changed, showed marked lessening of the lens opacities.

5. Increase of tension followed every application, being more pronounced in the larger doses. It eventually returned to the normal starting level.

6. Duplicate rabbits of 1 and 6, watched over a period of five months, have shown no evidence of cataract formation.

7. Clinically and histologically, there is evidence that silver screening which admits considerable beta-radiation is injurious to the rabbit eye. It would appear that

silver tubes per se have a limited place in treating human eye conditions.

CATARACT FORMATION

A word as to cataract formation in general in radium therapy may not be out of place. Very few reports of cataract developing after the use of radium appear in the literature. In nearly every such report the patient was suffering from malignancy of the eye, antrum, nose or some part in close proximity to the eye. We know that patients suffering with malign disease have more or less anemia; also that infection and breaking down of tissue is often present, and further that radium used in malignancy causes either a breaking down and sloughing for a period of time or else a rapid absorption and disappearance of the tumor. Consequently, it is most probable to assume that destructive toxins and ferments are set free and an altered metabolism present, all of which could affect the eye. Radium through the beta rays produces an ionization effect. It appears not unlikely that, as a result of such ionization, certain chemical changes in the eye substance, especially in the aqueous and vitreous, may result and a precipitation of calcium or other substances into the lens and its capsule occur. We have ample proof that radium in time causes definite changes in the blood, but of its effect on the blood chemistry we have little knowledge as yet. It is also known that the ultimate effect of radium is an obliterating endarteritis if sufficient is used. Such changes must naturally cause an altered nutrition for a time at least in the neighboring tissues.

From the foregoing facts it seems reasonable to conclude that cataract formation following irradiation occurs only when very definite abnormal changes in close proximity to the eye are present. These changes are probably colloidal in nature and the beta rays and the secondary beta rays from the gamma produce ionization sufficient to cause marked change in the aqueous, vitreous and blood vessels in close proximity to the lens and its capsule. It has also been shown experimentally that cataract can be caused by lack of certain vital elements in the diet. If such should happen to occur in a subject already debilitated by disease and infection, together with the additional fact of a probable large ionization effect when large doses of radium are used, it appears reasonable to expect that cataract might follow.

Fortunately, it does not appear that cataracts develop often. Pinch,[12] who has had more clinical experience than any one else, states that in 2,000 cases he has not seen untoward effects on the eye and thinks it impossible for radium to cause atrophy of the nerve or injury to the sight. In some 200 eye and nose patients treated with radium, I have never seen cataract formation. In thirty experimental animals kept under the same conditions, only two developed any lens changes, and these had definite abnormal conditions present; namely, infection, anemia and an avitaminosis from their continued poor selection of food.

BARE TUBE EXPERIMENTS

There appears to be some difference of opinion as to whether gamma or beta radiation is best suited to the eye. Johnson[13] reports seven cases of carcinoma of the conjunctiva treated with radium and under observation from two and a half to six years. The first four were treated with silver tubes. In one, a girl of 13, a cataract developed six years later, and in a man of 73, two and a half years later cataract and six months later glaucoma. The three cases treated with the bare unfiltered bulb under observation from one to two and a half years only had shown no sign of lenticular opacity. No mention is made of the exact ophthalmoscopic findings prior to applying the radium. Johnson in conclusion says: "None treated with the bulb have developed lens opacities. It is the method of choice."

Is it entirely fair to draw such conclusions when the period of observation has not been as long as that of one of the cases developing cataract, and in the other one the period when a cataract developed only equaled the longest observation of the unfiltered series? I think not; further, it is recognized in general that the young are more susceptible to radium. We also know that the aged are more prone to develop cataract; also that glaucoma is not unknown in elderly patients who have a cataract.

In order to test out the effect of beta radiation from bare tubes, the experiments were made.

METHOD OF APPLICATION

The regulation size glass emanation tubes, 13 mm. long and from 2 to 3 mm. in diameter, were used without screening. The tubes were placed in a hollow brass applicator having a movable cover with a 5 mm. square window opening in its center. The bottom of the applicator was filled with soft wax and the emanation tube laid on this so that the center of the tube came exactly in the center of the window opening. The depth of the window was exactly 1 mm., and the applicator was held almost touching the surface of the eye at 1 mm. distance. The method of applying and the area treated were the same as those previously described in the silver tube experiments.

The results were uniformly the same except for the intensity of effect due to different strengths of radium used. It does not therefore appear necessary to consider each rabbit separately as was done in the silver tube experiments. In all, there was in the beginning of the reaction photophobia, erythema of the lid margins and a mucopurulent secretion. The lids showed a blepharitis varying from a mild degree in the 15 and 25 millicurie doses to an ulcerative type in the 150 and 200 millicurie ones. The pigment changes were marked and far more intense than with the silver tubes. The margins finally lost all traces of pigment in rabbits 9 (50 mc.), 10 (100 mc.), 11 (150 mc.) and 12 (200 mc.). There was loss of cilia in these rabbits and failure in some of the cilia to return. The palpebral conjunctiva in all showed increased swelling of the follicles. In the larger doses, the lid margins were thickened. The final result in rabbits 9 and 12, as well as to a lesser degree in rabbits 10 and 11, was a contraction of the conjunctiva of the third eyelid and a trichiasis of varying degree.

Deposits of pigment in the corneal layers was observed in all eyes. In every rabbit, changes in the cornea varying from a punctate keratitis to a severe ulcer were present. In rabbit 7 (15 mc.) just before it was killed, it was possible to see a few fine deposits with the slit lamp. There was no opportunity to reexamine rabbit 8, as it was killed in an unfortunate accident. With the ophthalmoscope, some haze of the media was present. In all the other rabbits these corneal changes never entirely disappeared. In rabbits 10, 11 and 12 there was staining with fluorescein, and in rabbits 11 and 12 definite corneal ulcers existed.

The reaction in rabbit 12 was particularly severe, lasting for six months. Then the cornea began to clear,

12. Pinch, A. E. H.: Bristol Med.-Chir. J. **41**: 97 (July) 1924.
13. Johnson, F. M.: Am. J. Ophth. **7**: 589 (Aug.) 1924.

leaving considerable clear area to the temporal side and below so that an indistinct view of the fundus was obtained. There was vascularization of the cornea in all at some stage of the observation. In rabbits 9, 10, 11 and 12 there remained some corneal opacity.

As to the clinical changes in the deeper structures, some were observed in every rabbit except rabbit 8. There was more or less tortuosity of the vessels, a tendency for the nasal and temporal vessels to approach, and for changes in the disk, such as a gray spotted appearance in the medullations between the vessels also above in the disk. There was some evidence of fading of the pigment in the medullations, and in some of the rabbits the brown cleft was eventually almost lost.

Every rabbit in the series showed a violent reaction, the tension rising to higher levels in some than it had in the corresponding dose in the silver tube series. Chart 3 gives an idea of the effect produced.

Rabbit 8 showed changes of a pathologic edema type. There were evidences of an exudate in the retina near the nerve, fibrous rather than lymphocytic. The optic nerve showed signs of an early inflammation. This was more of a fibroblastic type than that of an exogenous infection. The unirradiated eye, however, showed some of these changes in the nerve and retina except that they were less marked. In all the other eyes of this series there was marked degeneration in the ganglion cells as well as in the nuclear and reticular layers. The vessels in the papilla in rabbit 12 showed some thickening of the walls. The nerves of all had evidences of degeneration and hyaline change.

SUMMARY OF FINDINGS IN BARE TUBE EXPERIMENTS

1. Every rabbit in the series showed definite changes in the cornea, varying from a mild punctate keratitis to

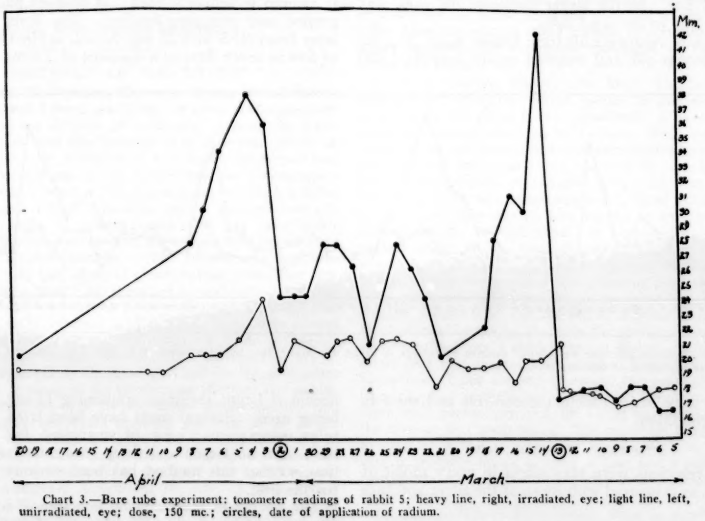


Chart 3.—Bare tube experiment: tonometer readings of rabbit 5; heavy line, right, irradiated, eye; light line, left, unirradiated, eye; dose, 150 mc.; circles, date of application of radium.

Histologic examination disclosed slight evidences of a scleritis in all except rabbit 7. In every rabbit except rabbit 7, the cornea showed definite epithelial changes marked by considerable loss of epithelium in the irradiated part. In other specimens the epithelium was definitely flattened. Increase of fibroblasts were found and there were numerous areas of infiltration in the substantia propria. In rabbit 12, Descemet's membrane showed thickening. In rabbits 11 and 12, there were healed corneal ulcers, with replacing of Bowman's membrane and the upper part of the substantia with fibrous tissue. The iris showed no change in rabbits 7 and 8 (15 and 25 mc.), but in all the others degenerative changes were seen in the pigment. Many fine more or less faded out pigment granules were scattered through the iris stroma. The same was present in the ciliary body. There was some evidence of increased vascularity, and in others obliteration of the vessel walls. In the lens, no changes were seen in any specimen. Rabbit 7 presented practically no retinal or nerve changes. an ulcerative keratitis ending in more or less corneal opacity.

2. There were definite permanent changes in the lids, conjunctiva, cornea, iris, ciliary body, retina and nerve in all the rabbits given higher doses.

3. There was marked increase in the tension of the irradiated eye of each rabbit and some corresponding increase in the unirradiated eye.

4. Except in the 15 millicurie dose, the findings were so definitely of an injurious nature, clinically and histologically, that the use of radium in bare tubes does not seem justifiable in the human eye except under the most exceptional circumstances.

GAMMA RADIATION WITH GOLD-PLATINUM TUBES

In these experiments it was desired to determine the effect not only on the anterior segment of the eye but also on the deeper structures, as lens, choroid, retina and nerve. Gamma rays were used for this, since they have 100 times the penetration of the beta rays. In

order to deliver the rays to these parts of the eye, the method of application had to be entirely different than in the other two series of experiments, in which the anterior segment was considered. It was necessary to filter out all the beta rays.

METHOD OF APPLICATION

All applications were made through the closed lids and at a fixed distance of 2 cm. Time did not permit trying different distances, and the one most used in the treatment of tuberculous lesions and in cataracts was employed. The tubes used for these experiments consisted of an alloy of platinum and gold, 0.4 mm. in thickness and probably of a density of 20. The glass emanation tubes were placed in the platinum tubes and these put in a 1 mm. brass capsule which was covered with 1 mm. of rubber, and the whole was wrapped firmly in gauze of sufficient thickness to make a small pack 2 cm. thick This was placed over the center of the closed lids. In the larger amounts, the pack was placed slightly to the nasal side.

The rabbits used were all from known stock, Australians, 8 months old, and weighed on the average 1,800 Gm. All were males except the controls and were in excellent condition.

REPORT OF CLINICAL CASES

Because this paper is already long and the further fact that some of the cases are to be reported by members of the Wills Hospital Staff, I will give no details of the patients or treatment but will briefly point out in what type of cases benefit has been derived.

Many of these patients had been under treatment for years. The cases of xerosis and acne rosacea were of eight years' duration, and both gave excellent response. Attention is called particularly to the corneal diseases treated. The results as to improvement in vision and deformity are most gratifying. In tuberculous lesions, radium alone or in conjunction with tuberculin has proved highly efficient. A patient with hopeless uveitis, reduced to light perception, was able to go about the ward alone. The improvement in corneal ulcers is often remarkable; practically all treatment except atropine as indicated and cleansing with boric appears unnecessary if radium is properly used. It relieves pain and congestion and promotes healing. The doses used have been from 0.75 to 1.25 mg. hours, applied every three to five or seven days at a distance of 2 mm., a platinum needle of 1 mm. thickness containing 15 mg. of element being used. Several cases have been tried with silver tubes using up to 25 mc. of emanation, but the results have been no better and there was considerable irritation, so that this method has been entirely abandoned for the first.

Chart 4.—Platinum-gold tube experiment: tonometer readings of rabbit 15; heavy line, left, irradiated, eye; light line, right, unirradiated, eye; circles, date of application of radium; dose, 50 mc.

The results in trachoma do not appear so good, but are modified by the fact that four of the number were either able to take only a few treatments or immediately after starting the treatment were operated on.

After nearly five years' use of radium in the treatment of diseases of the eye, we have come definitely to the conclusion that the best results are obtained with the gamma radiation in comparatively small amounts used over a more or less extended time except in those patients suffering with malignancy. It has also been found that the physical condition of the patient has much to do with the response to radium and the result. One cannot get results where the basal metabolism, for example, is lowered. Individual study of the patient, the type of the lesion to be treated and minute details in the application of the radium are very essential to attain best results.

SUMMARY OF FINDINGS

1. The reactions were very slight in every rabbit of this series, as compared with those of the silver and bare tube series.

2. There was no permanent lid or conjunctival change in any rabbit. Only two rabbits, 16 and 19, showed any permanent change in the cornea.

3. There were no lens changes in any rabbit of this series.

4. The changes in the iris were slight in the 100, 150 and 200 millicurie applications. These were confined to a few small areas showing some thickening of the vessel walls and slight pigmentary degeneration.

5. Of the changes in the retina and nerve it appears more difficult to speak with certainty, since the unirradiated eyes presented similar changes.

6. The tension was elevated slightly in every instance, with one single exception. At no time have such high rises as were found in the silver and bare tube series occurred.

7. As far as injury to the eye tissue is concerned, we can positively state that the gamma radiation in the platinum-gold tube series of experiments, clinically and microscopically, showed less change than was found in the bare tube or silver tube experiments.

CONCLUSIONS

1. Exact data as to dosage, method of application and type of lesion treated are essential if radium therapy in the field of ophthalmology is to progress.

2. Experimental data from a series of six experiments, using silver tubes with varying strengths of

radium, shows definite change and injury to the rabbit eye except in 15 and 25 mc. amounts.

3. The effect of unscreened bare tubes to the rabbit eye is decidedly caustic and injurious.

4. Heavily screened gamma radiation, with platinum tubes, appears to give little injury to the eye tissues except in the larger amounts.

5. In a series of twenty-three rabbits treated with different amounts of radium, the tension was found to be increased with but one exception.

6. There is evidence of delayed reaction and remote effects of radium, particularly after the use of larger amounts.

7. Radium appears of considerable use in conditions about the lids, conjunctiva and cornea, and to some extent in the deeper situated parts of the eye.

8. Experience in treating patients has shown that in most conditions the best results are obtained with gamma radiation in comparatively small amounts over an extended period of time.

Wilmer Institute, Johns Hopkins Hospital.

ABSTRACT OF DISCUSSION

DR. SANFORD M. WITHERS, Denver: It was stated that in cases 2, 3, 4 and 5 there was a rise of intra-ocular pressure in the treated eye of from 30 to 40 mm. I think Dr. Lane probably meant that the pressure was increased to 30 or 40 mm. I believe it is impossible to compare the normal and the radium treated eye of the rabbit with the glaucomatous eye of the human being. This is one point on which I differ with Dr. Lane. I have repeatedly seen a glaucomatous eye reduced markedly in pressure—one that has been under observation for three years—and the woman still has as good eyesight as before treatment. (She refused any operative procedure.) She had bilateral glaucomatous eyes. One case does not prove a theory, but there are several other cases that have been under observation from three to six months that have undoubtedly received some benefit from well filtered gamma irradiation of the glaucomatous eye. I do not believe it is possible to compare the so-called unirradiated eye of these cases reported by Dr. Lane that had the larger dosages of radiation, because of the penetrating effect of the gamma ray. In rabbits the eyes are so closely placed together that the unirradiated eye would probably get from 20 to 30 per cent of the total amount received by the irradiated eye of gamma radiation. The larger doses used by Dr. Lane are comparable in the human eye to the doses that would be used in treating malignant growths of the lids. I have studied more than 3,300 cases of epidermoid cancer. In all the malignant growths we went through, including basal cell cancer, we found that only 4.8 per cent arising from epidermoid structures were not basal cell in character. Of this 95 per cent of basal cell cancers arising from epidermoid structures, 95 per cent were above the clavicle, and of that number 24 per cent involved the inner or outer canthus or the upper or lower lid, and in 12.5 per cent of these cases there were multiple lesions. We have 213 cases in which we have treated malignant conditions around the eyelids. Four of these patients lost the eye, and I think one more will lose his eye. The radium in some instances produced a cataract. I am speaking of heavy gamma irradiation. Following the cataract the globe has become microphthalmic, the vision is lost, the retina detached, and the eye must be removed to relieve the pain. That has happened in four cases. We see a good deal in the literature in regard to using radium with impunity around the eyes. I do not think that can be so definitely asserted. The effects are late, but there is a definite percentage that lose their eye following heavy doses of radium. One of these patients had spicular cataract accompanying a large, bulky carcinoma of the outer canthus. We treated this with heavy doses of radium, and the cataract disappeared. But it reappeared and the patient had to lose the eye, following microphthalmic changes.

DR. MELVILLE BLACK, Denver: It has occurred to me on several occasions in which I have had to use radium that it might have some very definite use in the permanent destruction of the eyelashes, and I should like to have Dr. Lane give us some of her experience in that particular. I think radium is an agent that is valuable in many respects, and if it will permanently destroy eyelashes it might have a very definite application in many old lid cases that give us such an endless amount of trouble. If it can be done in a way that will be in no wise harmful to the eye itself I do not see why it should not have a rather definite place.

DR. G. C. SAVAGE, Nashville, Tenn.: The excessive use of radium and of the roentgen ray sometimes produces an inflammatory process that is akin to a burn. That excessive effect can be better controlled, I think, by a 6 per cent solution of acetic acid than by anything else. I have seen cases of epithelioma treated with the roentgen ray and radium and in some instances aggravated by the application, but the very day they commence an effort to control that excessive irritation with this 6 per cent solution of acetic acid, the patient was better and the radium and roentgen ray went on and accomplished its work. It is too annoying to the patient to suffer from the burn of either radium or roentgen ray when it can be easily and harmlessly controlled. It can be used half dozen times a day.

DR. E. J. CURRAN, Kansas City, Mo.: The formation of cataracts following the use of radium in therapeutic doses is an important thing to be considered. I have seen two cases of cataract produced by radium. Both were epitheliomas of the conjunctiva and they were treated by well known men. In the first case I had observed the eye six months after the application of radium. I had not seen it before. The epithelioma was completely cured, there was no corneal opacity, and there was no lens opacity to be seen with the ophthalmoscope at that time. It always struck me that radium might produce cataract, so I looked for it then and afterward. In nine months after the lens opacity began to appear, and in the course of the following year, the lens had to be extracted. Whether this is produced by direct tissue changes produced by the radium, or whether it is produced by chemicals formed by the large therapeutic doses necessary for the epithelioma I think does not matter, so long as it is established that there is real danger of producing cataract by radium. I saw the second patient two years after he had been cured of epithelioma by radium. Throughout the lens there were minute opacities, the vision was getting dim, and the cataract was progressing. One important thing in regard to cataract is that it may come late. I think in the second case it probably began to come a year and a half after the epithelioma was cured. I have also seen keratitis produced by radium.

DR. ARNOLD KNAPP, New York: What is your position in regard to radium treatment of pigmented processes of the conjunctiva, malignant and nonmalignant? If there are predisposing factors in the development of cataract after radium treatment, is it possible beforehand to prognosticate these?

DR. W. H. WILDER, Chicago: Some years ago I presented before the American Ophthalmological Society the report of a case of epibulbar tumor of the sclerocorneal region supposed to be melanotic sarcoma by those who had seen it, among others Dr. de Schweinitz and Professor Fuchs, and all advised enucleation, which was declined by the patient. Treatment with radium was carried on for a considerable length of time, at first with emanations, and although upward of eighty treatments were given, they did not completely check the growth. Treatment with radium element seemed to be efficient, and after seven such treatments the growth disappeared. The patient when last seen, a few months ago, seemed to be in perfect health, with nearly normal vision, and with no sign of the growth and no sign whatsoever of any opacity of the lens.

DR. W. L. BENEDICT, Rochester, Minn.: The application of radium is likely to be feared by those who have had unfortunate experiences more than by those who have had radium

used over a long period of years without any ill effect. One of my patients was a girl, aged 8 years, one of twins, who had interocular tumor, probably glioma. One eye had to be enucleated, and there was a very definite tumor in the other eye. During the last four years during which this eye has been under observation it has been exposed to 42,000 millicurie hours of radium without any ill effect. There is no loss of lashes, no burning of the skin, no keratitis, and no changes in the lens.

DR. LAURA A. LANE, Baltimore: Replying to Dr. Withers' question, the tension varied from 50 to 70 mm. in some of the rabbits. The rabbit's eye is more sensitive than the human eye. I cannot agree, however, that the two or three cases in which tonometer readings were taken are of much value. I admit that some temporary reduction may occur, but evidence of permanent reduction in glaucoma is lacking and it is wrong to subject patients to this treatment with the idea of securing a permanent effect when operative procedure has long proved of value. Further, Lederer's work bears me out in this. The results of his experiments are diametrically opposed, and he does not recommend radium as a therapeutic agent in glaucoma. From three to six months is not long enough to watch a glaucomatous patient. Pronounced reduction for many years from drug medication occurs only to have it suddenly rise in a few hours, destroying sight. Dr. Black asks about the effect on the lashes. Old trachomatous patients with disfiguring pannus and trichiasis respond well. Permanent epilation can be effected. Answering Dr. Savage, radium workers agree that the less counter-irritation we apply in the way of drugs the better. If radium is properly used we do not need to use medication in the eye, except in iritis and ulcers in which atropine is indicated. I use no other medication except these and boric acid when the secretion is troublesome. Dr. Curran spoke of some bad results and cataract following radium. It is the duty of every ophthalmologist to go over the patient carefully with the ophthalmoscope, also to make slit lamp studies before applying radium and keep notes of the findings. Dr. Knapp asked about the pigmented processes and cataract formation. My experience has been that there is resistance to irradiation in the melanotic type. Occasionally a benign pigmented growth of the lid or conjunctiva will respond, but these are very much slower than the other types. Patients whose physical condition is lowered by infection, who are anemic and who show signs of lack of nutrition may develop cataract. This subject of cataract formation in radium therapy is largely due to the physical condition of the patient and the manner of applying the radium. Dr. Pinch, who has had large experience, reports 2,000 cases without seeing cataract formation following the use of radium. I have watched more than 200 cases from one to five years and have not seen a cataract. Patients undergoing radium treatment are given very definite instructions as to diet. Foods with plenty of vitamins are selected, and the physical condition is improved by every means possible. Dr. Wilder's experience is encouraging. I have had a similar experience three times, twice in a benign and once in a malignant condition in which large doses were used first without result, and on changing to small doses good results followed. I feel that those who oppose radium are doing so either because they are ignorant of its use or because it has not been properly used and bad results followed.

Hippocrates and Galen.—It is, perhaps, worth reflection that Hippocrates, who said that the physician is most godlike when philosopher, has himself more than any other been spoken of by men as divine. As much was never said of the infinitely more successful Galen, whose system, unshaken during a thousand years, still influences the teaching in every classroom and in every laboratory and still dictates, for the most part, the modality of our formal diagnoses. His system, his rationalizations and his philosophizings are never credited with the elemental intuition and simple rightness that seem to us inseparable from the clear mind and natural method of Hippocrates of Cos.—Crookshank, F. G.: *Lancet* **2**:998 (Nov. 13) 1926.

METASTATIC BRAIN ABSCESS SECONDARY TO PERIRECTAL ABSCESS AND STRICTURE OF RECTUM

REPORT OF CASE *

CHARLES S. SCHAFER, M.D.
PHILADELPHIA

The occurrence of a brain abscess secondary to a perirectal abscess and a stricture of the rectum is so unusual that this case merits report.

REPORT OF CASE

T. H., a colored man, aged 55, a chef, was admitted to Mount Sinai Hospital, May 12, 1924, because of incontinence of the bowels. For eight years he had difficulty in controlling his bowel movements, and had a continuous foul discharge about the anus. He had lost 50 pounds (22.7 Kg.) in the past eight years.

Examination revealed, on each side of the anus, a hard indurated area involving both ischiorectal fossae. Six or more sinuses discharged a foul, greenish-yellow pus from fistulous tracts, which extended into the rectum and ischiorectal fossae. Rectal examination disclosed a stricture situated about 1½ inches above the anal orifice. It was impossible to pass the tip of the index finger beyond this point in the bowel. The rectal walls were thickened and indurated. Except for a complete right inguinal hernia, the examination proved negative.

The blood Wassermann reaction was negative.

Operation consisted of a posterior proctotomy and wide excision of the fistulous tracts and indurated tissue in the ischiorectal fossae. A section of the strictured area was excised for biopsy. The character of the induration and the great loss of weight suggested a possible malignant growth. Microscopic examination, however, revealed only chronic inflammatory tissue with marked fibrosis. Two days after operation the patient passed his first full-formed stool in eight years. He was discharged from the hospital, May 18, five days after operation. Rectal dilation by means of a Wales bougie was continued daily until the patient's last illness in August, 1924. Recovery seemed complete except for some discharge from the right ischiorectal fossa, where an old fistulous tract was evidently overlooked at the time of operation.

The patient next came under observation, August 14, three months after operation, at which time he presented a left-sided hemiplegia. He was well oriented and quite sensible, but he had a slight difficulty in articulating. The reflexes were increased on the left side. Pupils were equal in size and reacted to light and in accommodation. The temperature was 97.2, and the pulse, 62.

Two days prior to the hemiplegic attack, the patient complained of severe frontal headache. The next morning his headache disappeared, but he found that he could not move his left arm. That evening his left leg became similarly involved. His condition grew rapidly worse. August 16, he had gross jerking movements of the left arm and left leg, with general convulsions. He was admitted to the neurologic department of the Philadelphia General Hospital with a diagnosis of cerebral thrombosis.

Neurologic examination (from the neurologic service of Dr. Lloyd of the Philadelphia General Hospital) disclosed the following salient features: The patient was drowsy, but could be aroused fairly easily, and he answered questions intelligently. There were spasmodic contractions of the abductor and flexor muscles of the thigh on the left side. There were aimless movements of the left arm and hand. The speech was thick and almost unintelligible. The face had an ironed-out appearance on the left forehead. There was a slight ptosis of the right eyelid. The mouth could not be drawn to the left. The tongue protruded to the left with slight tremor. The other cranial nerves were normal. There

* From the surgical service of Mount Sinai Hospital and the neurologic service of the Philadelphia General Hospital.

was a paralysis of the left arm and left leg. The provisional diagnosis was general arteriosclerosis, and cerebral thrombosis, internal capsule, right hemisphere.

The patient grew progressively weaker, and on August 23, the hernial sac became filled with intestine and fecal masses. The temperature and pulse rose, and the patient now could not be aroused. Death followed on the morning of August 26, ten days after admission.

Necropsy revealed 8 inches of cecum and ascending colon, filled with impacted feces, in the right scrotal sac. Strangulation or perforation of the intestines was not seen. There was absence of free fluid in the abdominal cavity.

Examination of the brain showed that the right cerebral hemisphere was larger than the left. The right frontomesial surface extended over and invaginated itself into the left frontomesial surface. There was a definite bulging of the third ventricle, which suggested an increased intracerebral pressure. Brain edema was evident. This was most marked in the posterior portion of the right frontal lobe. There was softening of the right cerebral hemisphere, thickening of the pia arachnoid and a slight arteriosclerosis.

On cross-section of the hemisphères in a horizontal plane, an abscess cavity lined with a greenish pus and filled with a four-smelling fluid was seen in the right frontomotor area. The cavity measured 2.5 cm. by 5 cm., and was roughly oval. The internal capsule was involved as well as portions of the caudate and the lenticular nuclei.

The gross diagnosis was brain abscess of the right frontocapsular area, and moderate arteriosclerosis.

Bacteriologic examination of the pus from the abscess cavity revealed colon bacilli and streptococci.

COMMENT

Less than 50 per cent of the cases of metastatic brain abscess are diagnosed ante mortem. This fact shows that the condition is not so uncommon as the literature would lead us to believe. This is only too well illustrated in the foregoing case report. A definite diagnosis was not made until the brain was actually sectioned.

The majority of metastatic brain abscesses are secondary to purulent infections in the thoracic cavity. But such simple conditions as whitlow, tonsillar abscess and suppurative adenitis have been responsible for some cases. The case here presented appears to be unique from the standpoint of etiology.

The perirectal abscess and stricture were regarded as the primary focus of infection because of the events following operative measures instituted for their relief. As part of the after-treatment, a Wales bougie was used daily to keep the lumen of the bowel open. The patient, after careful instructions, used this instrument until the onset of his paralytic symptoms. The dilator could have readily produced enough trauma and friction to dislodge an infective thrombus, which was thrown into the blood stream and thence carried to the brain.

The invasion pathway in cases of metastatic abscesses is often obscure. The arterial route has been demonstrated in some instances, the perivascular spaces in others. For the reasons just stated, it is believed that the infection in this case was blood-borne.

Further to substantiate the etiologic factor in this case, there is the bacteriologic study of the pus from the abscess cavity. A culture revealed colon bacilli and streptococci. The mixed infection is accounted for by the fact that colon bacilli will not attack healthy structures outside of the abdominal cavity. They appear only as secondary invaders in tissues previously infected, notably by streptococci. Moreover, it is quite conceivable that the lower bowel (rectum) was primarily involved in a mixed infection. Unfortunately, a culture from the rectum was not taken to confirm this fact.

This case was seen in the terminal stage of the course of the brain abscess, when the onset is rapid and paralytic symptoms are the main feature. This phase of brain abscess may readily be confounded with cerebral hemorrhage or softening, and is the error most commonly made. As occurred in this instance, the brain may have to be sectioned before the abscess is disclosed.

The diagnosis of metastatic brain abscess is difficult unless a definite and demonstrable infection exists, such as a purulent pulmonary process or a generalized pyemic infection. But a preexisting suppurative process in any part of the body, plus symptoms of sudden cerebral disturbance, should suggest the possibility of metastatic brain abscess.

1701 West Montgomery Avenue.

POLLEN TOXEMIA IN CHILDREN

I. S. KAHN, M.D.
SAN ANTONIO, TEXAS

In most instances of hay-fever and asthma in children, there is absence of or merely slight impairment of general health and nutrition, even when the asthmatic state is of almost daily occurrence and of months' or years' duration. In other children there exists, in addition to the physical discomfort, what is apparently a definite clinical state due to the toxemia of constant antigen absorption, the condition being made obvious by the exclusion of other toxic influences, by appropriate laboratory measures, and by the relief of the hay-fever and asthma.

The etiologic factor in these cases has been primarily pollen, with additional feather sensitiveness. Foods have not been a factor in a single instance.

The history of these cases consists of frequent almost nonintermitting so-called colds dating from early infancy, which actually represent the mild type of hay-fever so frequently seen in asthmatic children. Typical severe seasonal hay-fever is unusual. Frequent attacks of bronchitis antedate the initial asthmatic attack. Infantile eczema is a common story. The family history almost invariably shows hay-fever or asthma. The noses of these children are frequently in a state of prolonged obstruction with almost constant mouth breathing, resembling extensive adenoid growth. Removal of adenoids and tonsils in all these cases had not given relief. Nose picking and rubbing is a common story.

The physical examination of these children shows deficient growth and weight, and backward mentality. The complexion is sallow or of a saffron tinge; on the whole, the condition decidedly resembles hereditary syphilis or hookworm infection. The nasal mucosa is typical of vasomotor rhinitis. The chest is barrel shaped, with marked emphysema and heavy generalized râle formation. Cardiac enlargement and murmurs are absent. The abdominal examination is negative.

Urine and stools are normal. The blood is negative except for mild secondary anemia. Eosinophilia is uncertain, while a lymphocytic increase is not unusual.

The most remarkable result of this toxemia is psychic in character. The mentality is deficient, the condition resembling that of morons or idiots in severe cases. Languidness and listlessness are the rule, alternating with spells of intense temper and fury. These children are almost invariably extremely cross and irritable, resisting all handling, and crying on the slightest provocation.

The appetite is poor and capricious, and nocturnal enuresis is common. While these children are usually asthmatic, one of the worst cases in my experience, from a mental point of view, was a patient with chronic hay-fever who had never had asthma.

Within a few weeks, or at times even days, following the institution of proper measures to control the vasomotor rhinitis by desensitization or pollen precautions, the entire picture changes. With improvement, but long before complete elimination of the hay-fever and asthma, the complexion clears, appetite returns, and the general physical condition rapidly approaches that of the normal child of that age. I have in my records, one case of a boy, aged 8, with a gain in weight of 20 pounds (9 Kg.) in a year's time. The most remarkable change is in the mental condition, which seems the first abnormality to correct itself. These children become almost at once, even within a few days, bright, cheerful and playful. Several mothers have considered the mental change as something miraculous.

The enuresis corrects itself ordinarily extremely slowly if any allergic symptoms whatever persist.

Desensitization treatment in these cases is usually long and tedious, but ordinarily successful.

Medical Arts Building.

THE FREQUENCY OF POSTURAL SCOLIOSIS

STEVENSON SMITH, PH.D.
Director of the Gatzert Foundation for Child Welfare, University of Washington
SEATTLE

The 350 children whose scoliosis was measured and who form the basis for this report were unselected cases and represent a fair sample of the general population. One hundred and twenty were Jewish children, but these do not differ in any significant way from the others. There were equal numbers of boys and girls. They ranged in age from 6 to 13 years, with a mean age of 9.4 years (probable error 1.42).

The method of measurement was as follows: An ink dot was placed on the skin over the center of each spinous process. The child stood with feet together and weight equally distributed. A piece of rubber band was then stretched from the center of the seventh cervical to the center of the coccyx. At the level of greatest spinal deviation from straightness an ink dot was placed in the line of the rubber band. The mark over the neighboring spinous process was verified, and the rubber band was again stretched and the mark indicating its position was verified. The distance between the two marks was then measured, as was also the vertical distance from the seventh cervical to the coccyx.

As the measurement of the greatest deviation from straightness alone does not serve for the comparison of tall and short children, this was expressed in terms of the length of the spinal column below the seventh cervical. For example, a deviation of 1 cm., when the length is 40 cm., is 0.025 of that length. In order to compare a patient's curvature with that of the general population by means of the accompanying tables, measurements must be taken by the method described above and an index of curvature obtained by dividing the deviation by the length.

The reliability of the measurements was tested by repeating them after ten weeks in thirty-four cases. These children had been in a posture class during this time and, as some had benefited more than others, the test is not entirely satisfactory. The correlation between the first and second measurements was 0.62 (probable error 0.73). This indicates that several measurements should be made and the results averaged before assigning a score to any child. The reliability of the entire distribution is extremely high, the mean (0.01327) having a probable error of 0.0004, or 3 per cent of its magnitude.

TABLE 1.—*Degree of Curvature*

	Mean	Standard Deviation
Boys	0.01228	0.0100
Girls	0.01426	0.0117
Both	0.01327	0.0108

Left scoliosis is much more common than right. The relative frequency is given in table 2.

Three patients out of four have left scoliosis. The reliability of this is indicated by the similar proportion existing among the boys and the girls, each group containing 175 children.

TABLE 2.—*Relative Frequency of Scoliosis*

	Boys Per Cent	Girls Per Cent	Both Per Cent
Right curvature	27.3	24.4	25.9
Left curvature	72.7	75.6	74.1

When the degree of curvature distribution is corrected to contain equal areas of right and left scoliosis, and when these are dealt with as plus and minus values, they are found to be symmetrically grouped about the zero point. The actual mean is 0.00064 left, and the standard deviation is 0.0175. With these measures the facts given in table 3 may be derived from the normal probability integral.

TABLE 3.—*Relation of Index to Frequency*

A child whose index of curvature is:	Has more curvature than the following percentage of children:
0.0021	10
0.0043	20
0.0067	30
0.0092	40
0.0118	50
0.0147	60
0.0181	70
0.0224	80
0.0287	90
0.0344	95
0.0451	99

In order to determine whether postural scoliosis increases with age, 100 patients were remeasured after an interval of two years, with the results given in table 4.

TABLE 4.—*Increase in Postural Scoliosis with Age*

	Mean	Standard Deviation
First measurement	0.01320	0.0085
Two years later	0.01326	0.0088

A significant increase is not shown here. The coefficient of correlation between age and degree of curvature for all 350 cases was found to be less than 0.1.

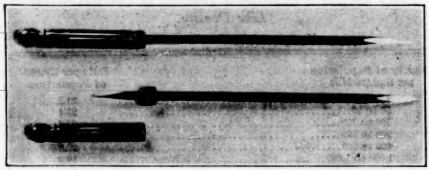
Relative shoulder height was measured by means of a pendulum level in fifty cases. The shoulder on the side of the convexity was higher in 72 per cent and lower in 28 per cent.

Clinical Notes, Suggestions and New Instruments

A MODIFICATION OF THE STEINMAN NAIL

H. D. SONNENSCHEIN, M.D., NEW YORK

The accompanying illustration is of a modification of the Steinman nail, used so commonly to obtain skeletal traction in fractures of the long bones. To the usual type of nail, a "shoulder" is braised at one end; this shoulder is so placed that it does not interfere with the skin wound or with the traction pieces. A sheath of steel tubing is fashioned over this end, long enough to fit against the shoulder and to clear the end of the nail. The blows of the mallet are directed against the flat end of this sheath, and after the nail is in position the tubing is removed.



Steinman nail, with shoulder and protecting sheath.

The chief annoyance in using the Steinman nail is that the nail sticks into the mallet at the end of the blow, and at the close of the operation the mallet is badly mutilated, and many times the nail also. If, as is a common practice, a flat instrument is held between the nail point and the mallet, this instrument is dented and scratched, and does not protect the end of the nail from damage.

The shoulder is of aid in withdrawing the nail, as it can more easily be grasped with a pair of forceps, offering a better hold than the rounded nail.

This simple and inexpensive improvement in the nail can be made in any tool or brace shop.

1133 Park Avenue.

THE ADMINISTRATION OF COD LIVER OIL

HENRY J. GERSTENBERGER, M.D., CLEVELAND
Professor of Pediatrics, Western Reserve University School of Medicine

Frequently I have been asked at the end of the many talks that I have given to both professional and lay audiences, in connection with the use of cod liver oil in the prevention of rickets, the following question:

How do you disguise the annoying taste of cod liver oil?

How do you administer cod liver oil?

What do you do when a child refuses to take cod liver oil?

What do you do when cod liver oil upsets the digestion of the infant or child?

To all these questions but one answer has been given, namely: Cod liver oil should be given once daily on an empty stomach and when most of the family members are likely to be at home. In other words, the cod liver oil should be given in whatever dose thought necessary before breakfast. If under these circumstances the child vomits its first dose, a second should be immediately administered. If any vomiting occurs at all very little cod liver oil is lost, and at any rate "the mess" is much less annoying than it is when cod liver oil is vomited just after the child or infant has taken a meal.

As it also is a good policy to see that an antiscorbutic substance is administered daily, a small amount of orange juice, if desirable, may be taken immediately after the cod liver oil has been swallowed. The parent, however, is advised not to offer the orange juice as a reward or as a "chaser," but to get the child to understand in the first place that cod liver oil is essential to his welfare, and in the second place that he will get accustomed to its taste within a week or ten days.

I have frequently advised parents to take cod liver oil at the breakfast table as an example to their children and for their own benefit. If a child has been poorly trained, this method of having the parent take the cod liver oil without making any remarks or faces before the child is required to ingest this wholesome material is of great educational value.

Special Article

DEATHS FROM DIABETES IN MASSACHUSETTS, 1900-1925

ANGELINE D. HAMBLEN
Statistician, Massachusetts Department of Public Health
AND
ELLIOTT P. JOSLIN, M.D.
BOSTON

Since 1900 there has been an upward trend in the death rate from diabetes in Massachusetts. The rate for Massachusetts has been constantly higher than the rate for the registration area (chart 1). This was true

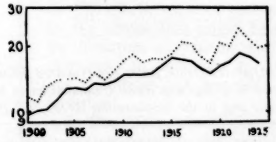


Chart 1.—Diabetes in the registration area (solid line) and in Massachusetts (dotted line): death rate per hundred thousand of population, 1900-1925.

TABLE 1.—*Death Rate from Diabetes in the Registration Area and in Massachusetts**

Year	Registration Area	Massachusetts†
1900	9.7	11.8
1901	10.2	11.2
1902	10.3	13.1
1903	11.3	14.0
1904	12.8	14.1
1905	12.9	14.2
1906	12.7	13.7
1907	13.5	15.1
1908	13.4	13.9
1909	13.8	15.5
1910	14.9	17.0
1911	14.9	18.3
1912	14.9	16.7
1913	15.0	17.4
1914	16.2	17.3
1915	17.5	18.2
1916	17.1	21.0
1917	17.0	20.6
1918	15.9	17.9
1919	14.9	16.5
1920	16.1	20.6
1921	16.8	19.9
1922	18.4	24.1
1923	17.9	21.4
1924	16.6	19.3
1925	....	20.0

* Rate per hundred thousand population, 1900-1925.
† State figures.

not only for the crude rates but also in 1910 and 1920 when the rates for the registration states and for Massachusetts were adjusted to the standard million population.

URBAN AND RURAL

In the registration area since 1906 the rate for urban districts has been considerably higher than for rural. In Massachusetts, however, with the exception of 1912, 1922 and 1923, the rate for rural districts has been higher than for urban (chart 2). To determine

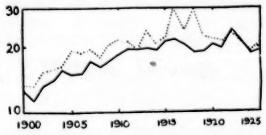


Chart 2.—Diabetes in urban (solid line) and rural (dotted line) districts in Massachusetts: death rate per hundred thousand of population, 1900-1925.

whether this difference is significant, the mean difference and the standard deviation of the mean difference were computed for the registration area and

TABLE 2.—*Adjusted Death Rate for Diabetes in Massachusetts and in the Registration States*

Year	Registration States	Massachusetts
1900	10.4	11.1
1910	14.9	18.0
1920	15.9	18.4

TABLE 3.—*Diabetes Death Rates per Hundred Thousand of Population in Urban and Rural Communities in Massachusetts and in the Registration Area, 1900-1925*

	Registration Area		Massachusetts*	
Year	Urban	Rural	Urban	Rural
1900	9.3	10.8	12.6	13.3
1901	10.0	10.8	11.3	13.1
1902	9.9	11.5	13.1	15.2
1903	10.9	12.1	14.0	15.9
1904	12.6	13.3	15.7	16.1
1905	12.8	13.3	14.9	19.2
1906	13.1	12.9	15.0	18.8
1907	13.9	12.8	17.3	19.6
1908	13.7	12.9	16.0	17.8
1909	14.5	12.8	17.1	20.5
1910	16.0	13.5	18.6	21.5
1911	16.4	13.0	19.5	21.1
1912	16.5	13.1	19.4	19.3
1913	16.9	13.4	19.6	23.5
1914	17.9	14.3	19.3	20.9
1915	19.4	15.4	21.3	22.0
1916	19.7	14.4	21.7	20.2
1917	19.8	14.1	20.8	23.5
1918	18.6	13.4	18.8	30.0
1919	17.8	12.2	19.0	22.1
1920	19.1	13.1	20.6	21.8
1921	20.1	13.6	19.9	21.4
1922	22.2	14.9	24.1	23.3
1923	21.7	14.3	21.4	21.1
1924	....	....	18.9*	19.0*
1925	....	....	19.2*	20.7*

* 1900-1923, federal figures; 1924-1925, state figures.

for Massachusetts. For the registration area the mean difference divided by the standard deviation of the mean difference was found to be 4.5 and is significant, and for Massachusetts the same figure was found to be 2.2 and probably is not significant.

The rates for urban and rural districts were taken from the federal reports. "Urban" included cities of 10,000 inhabitants at the preceding census, the remainder of the state being included in "rural." It should be remembered that in Massachusetts it is very difficult to distinguish between urban and rural districts. Cities like Newton (population 53,003) have sections that are decidedly rural in character, and small places like Shelburne (population 1,538) sometimes have tenement districts.

DENSITY OF POPULATION

In Massachusetts, the rates based on the population for 1923 and the average number of deaths in localities of like density for the last five years were found to vary from 17.8 in the localities with a density of from 200 to 599 per square mile to 22.2 in localities with a density of from 100 to 199 per square mile, but they do not present any evident trend.

TABLE 4.—*Death Rates from Diabetes in Communities of Like Density*

Massachusetts—Average, 1921-1925

Density of Population per Square Mile	Rate per 100,000 of Population
1 to 49	21.1
50 to 99	21.4
100 to 199	22.2
200 to 599	17.8
600 to 999	20.8
1,000 to 1,699	19.6
1,700 to 2,999	19.9
3,000 to 5,999	21.7
6,000 to 14,999	18.8
15,000 +	22.0

Regrouping these so that approximately the same number of deaths occurred in each group, the rates were found to vary less and still do not show any trend. This was to be expected, as the difference between the urban and rural rates has been small during the last five years.

TABLE 5.—*Average Death Rates from Diabetes in Massachusetts by Age and Sex* *

	All Ages		Under 20		20-49		50+	
	Male	Female	Male	Female	Male	Female	Male	Female
1901-1905	11.4	14.8	3.4	3.3	6.9	6.6	45.0	61.9
1906-1910	12.6	17.2	3.5	3.7	7.0	7.5	51.3	72.6
1911-1915	15.7	19.9	4.3	4.2	8.2	8.3	63.4	80.5
1916-1920	16.8	22.0	4.2	4.0	9.0	8.5	65.5	83.3
1921-1925	15.7	25.4	2.9	2.9	6.0	7.9	67.0	101.8

* State figures; death rate per hundred thousand of population.

TABLE 6.—*Percentage of Total Deaths from Diabetes in Age Groups**

Year	Under 20	20-49	50+
1900	11	24	65
1910	10	23	67
1920	7	21	72
1925	3	13	84

* State figures.

AGE AND SEX

Since 1901 the rate for females has been higher than for males. When analyzed for age, this difference is found to be almost entirely in the age group 50 +. In this age group the average of the rates for the last five years for females was 52 per cent higher than for males. A definite trend, however, was not shown.

In 1900, 65 per cent of all the deaths due to diabetes were in the age group 50 +. In 1910, 67 per cent; in 1920, 72 per cent, and in 1925, 84 per cent were in this age group.

The death rate for the age group 50 + has risen with slight variations since 1900. The rate for the age group 20-49 was also rising between 1900 and 1922, but since then it has shown a decided decline. The rate for the age group under 20 has been falling since 1910, but has had a much more rapid decline since 1922 (chart 3).

On plotting the death rates of the other main causes of death in the age group 50 +, is was found that the rates for cancer, angina pectoris, heart disease and apoplexy are rising, while the rates for nephritis, diseases of the arteries, pneumonia and tuberculosis are falling or remaining stationary (chart 4).

SUMMARY

1. There has been an upward trend in the death rate from diabetes since 1900.

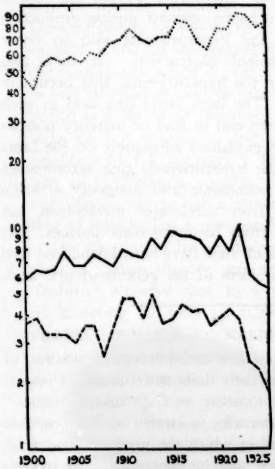


Chart 3.—Diabetes in Massachusetts; age groups: death rate per hundred thousand of population, 1900-1925; dotted line, 50+; solid line, 20-49; broken line, under 20.

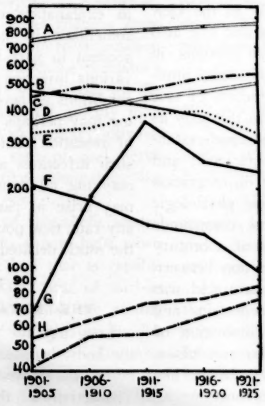


Chart 4.—Average death rate in five year periods from principal causes of death in the age group 50+ in Massachusetts, 1901-1925: *A*, heart disease; *B*, pneumonia; *C*, apoplexy; *D*, cancer; *E*, nephritis; *F*, tuberculosis; *G*, diseases of the arteries; *H*, diabetes; *I*, angina pectoris.

2. The rate for Massachusetts has been constantly higher than for the registration area.

3. The rate for rural communities has been higher than for urban, but the difference in rate has been small since 1920.

4. Density of population does not have any apparent effect.

5. The rate for females is higher than for males in the age group 50 +.

6. An increasing proportion of all diabetic deaths are in the age group 50 +.

7. There has been a decided fall in the death rate in the age groups under 20 and from 20 to 49 from 1922 on.

Physical Therapy

THE FOLLOWING REPORT HAS BEEN APPROVED BY THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION.

H. J. HOLMQUEST, SECRETARY.

REPORT OF THE COUNCIL ON PHYSICAL THERAPY

ON THE SALE OF ULTRAVIOLET GENERATORS DIRECTLY TO THE PUBLIC

The Council on Physical Therapy of the American Medical Association, on the basis of the present available evidence, is convinced that the sale of generators of ultraviolet energy to the public for self-treatment is without justification. The Council bases its condemnation of the sale of such apparatus for this purpose on the following grounds:

1. The uninformed public could not take the proper precautions in administering treatments and, as a result, severe general burns or grave injury to the eyes might ensue.

2. Those not familiar with the possibilities of such apparatus would be led to place unwarranted confidence in the therapeutic value of such treatment by the claims that might be made in the literature advertising such generators, and to undertake to treat serious conditions not amenable to such treatment.

3. The unrestricted possession of such therapeutic means would tend to deprive people of expert diagnosis by encouraging them to make self-diagnoses.

4. Such practice would encourage the sale of useless and fraudulent lamps which would be advertised as generators of ultraviolet rays, since the public would have no means at its disposal to determine the quality or quantity of the radiant energy emitted by such lamps.

For the foregoing reasons, the Council on Physical Therapy considers as detrimental to public welfare the sale or the advertising for sale, directly to the public, of a generator of ultraviolet energy. Under rule 11 of its Official Rules, the Council will declare inadmissible for inclusion in its list of accepted devices for physical therapy apparatus manufactured by a firm whose policy is in this matter detrimental to public welfare.

Medical and Nonmedical Personnel.—The entrance of the nonmedical personnel into welfare services has become a source of annoyance to the physician, a feeling in which the public do not participate, and the public is found to deprecate the attitude of the medical profession. Should this be so? May it not be true that if the physician extended his viewpoint beyond the treatment of the sick, and beyond the operating table to embrace the welfare and the health conditions of the family and the community—that the entire field should be left open to him?—*J. Iowa M. Soc.*, December, 1926.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - - Five dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, JANUARY 22, 1927

BACTERIOGENOUS URIC ACID

The development of our knowledge of the origin of the uric acid in the urine has been slow. More than one theory has been abandoned after experimental investigation. This applies, for example, to the view of a previous generation of physiologists that uric acid resulted from a decomposition of simple proteins, in which it might arise as an antecedent of urea. Similarly, the notion of attributing the production of uric acid to a diminished oxidative capacity in the body as a whole may be dismissed. Following Fischer's establishment of the purine structure of uric acid and Kossel's demonstration that purines are disintegration products of nucleoproteins, there came physiologic proofs of the transformation of purine compounds into uric acid in the body.[1] A quarter of a century ago the now generally maintained distinction between endogenous and exogenous sources of uric acid was developed. On a diet free from nucleoproteins and purines, as well as in starvation, the elimination of uric acid and other purine bases does not cease. Under such conditions, some metabolic change like the destruction of tissue nucleoprotein must supply the purine nucleus for the eliminated product.

In the early investigations of endogenous uric acid output, the impression was gained that this represents a rather constant quantity for any person under fixed conditions of living, and is practically independent of the total protein or energy content of the diet. Of late, however, a considerable variability in endogenous uric acid elimination has been noted on more critical examination; so that Folin[2] and his associates, in summing up the situation recently, stated that normal uric acid elimination in man is subject to a large and seemingly unaccountable variation, which occurs irrespective of uniformity of diet and irrespective of type of diet.

A possible explanation of such seeming irregularities may be found in recent studies of McDonald and Levine[3] of the Creighton University College of Medicine at Omaha. Realizing the often extensive growth and subsequent destruction of micro-organisms in the alimentary tract, these investigators examined the possibilities of purine and even uric acid synthesis by certain bacteria commonly parasitic in man. The results were positive for such organisms as *Bacillus fecalis-alkaligenes, Bacillus enteritidis* and *Bacillus paratyphosus* B. Not all species, however, produced uric acid when grown on a purine-free medium. McDonald and Levine regard the demonstration of such heretofore unrecognized bacteriogenous factors as having an important bearing on the normal and pathologic variations in the uric acid of human blood. If the uric acid produced by bacteria is, like indican, absorbed unchanged from the bowel or from any other anatomic region, they suggest, it would tend to add to the content of the blood uric acid of endogenous and of exogenous origin. It is interesting to spin hypotheses out of these new discoveries. Thus, the Omaha biochemists point to bacteriogenous purine production in explanation of the hyperuricemia said to occur sometimes in intestinal obstruction. It may also account in part for the hyperuricemia that occurs in various infections. The high blood uric acid in such conditions as nephritis and in lead or mercury poisoning may perhaps be explained adequately on the basis of retention; but the hyperuricemia that accompanies such infections as pneumonia and nongouty arthritis may not all result from accelerated metabolism, but may arise in part from bacteriogenous purines. At any rate, new points of view have been introduced into the much debated problem of the genesis of uric acid.

1. The earlier history of the subject is given by Mendel, L. B.: The Formation of Uric Acid, the Harvey Lectures, 1905-1906, p. 195.
2. Folin, O.; Berglund, H., and Derick, C.: The Uric Acid Problem, J. Biol. Chem. **60**: 361 (June) 1924.
3. McDonald, J. F., and Levine, V. E.: Studies in Uric Acid Metabolism, Am. J. Physiol. **78**: 437 (Oct.) 1926.

THE METABOLISM OF NERVE FIBERS

Long ago the muscular and nervous structures of the body, because of their dominant functional importance, were classed together as the "master tissues." The activity of the muscles is known to be dependent on metabolic changes in which the production of acid, notably carbonic acid, and the consumption of oxygen are the main chemical characteristics. Incident to these is the measurable production of work and heat. Whether nervous tissue behaves in an analogous manner has not been so clearly determined. For the nerve cells, as they occur aggregated in the brain and various ganglionic masses, the probability of an active chemical exchange incident to their function has generally been accepted. They show symptoms of fatigue and a sensitiveness to lack of oxygen, somewhat as a muscle does.

For the nerve fibers, however, the evidence has been far less cogent. Before Helmholtz, in 1850, measured the rate of transmission of the impulses in a nerve, it was generally assumed that they traveled with a rapidity comparable to that of light and that the changes

represented essentially a physical phenomenon. This seemed the more likely when efforts to secure evidence of heat production incident to the transmission of nerve impulses failed. Fifteen years ago, the English physiologist Hill,[1] on tetanizing a nerve for twenty-five seconds, failed to get evidence of an increase of temperature in the nerve by an apparatus that was sensitive to about six millionths of a degree centigrade.

A structure that absorbs oxygen and produces carbon dioxide may be expected to show signs of occasional exhaustion, as does muscle. Parker[2] has remarked that the ability of nerve to respond continuously to stimulation has long been known, and this fact has been urged repeatedly by those who favor a physical conception of transmission. It is, however, quite probable, he adds, that nerve does tire, but that the period of its exhaustion is extremely brief in that its recovery is very rapid. The refractory period of a nerve immediately follows the passage of an impulse, and the striking peculiarity of this period is the well known inability of the nerve to respond to a renewed stimulus. During this period the nerve changes from the condition in which it cannot respond to stimulation to one in which it can; in other words, the refractory period is a period of recovery. It begins with all the signs of full exhaustion and passes on quickly to a condition of full recovery. This momentary exhaustion is in Parker's opinion the sign of real nerve exhaustion. It is not a cumulative exhaustion, like that of muscle, but a momentary one.

The question of the production of "metabolic waste" such as carbon dioxide was set in a new light when Tashiro[3] reported that, by a method that is capable of detecting as little as 0.0000001 Gm. of carbon dioxide, he had been able to show that the resting nerve produces this catabolite and that this production is increased when the nerve is stimulated. The conclusions have been sharply criticized, notably by Sir William Bayliss. Tashiro's pioneer work has, however, been substantiated by Parker. Carbon dioxide is a true nervous metabolite. In Parker's experiments, the rate of discharge of carbon dioxide from a quiescent nerve varied from 0.0071 to 0.0128 mg. per gram of nerve per minute and averaged 0.0095 mg. Stimulated nerve showed an increased rate of carbon dioxide production of 15.8 per cent over that of quiescent nerve.

Chemical change thus becomes established as a factor in nerve transmission. Oxygen is used, carbon dioxide is discharged, and a progressive activity occurs. According to Parker, the oxidation in the process is probably a step in restoration rather than part of the impulse proper. He compares the fresh nerve to a suspended weight which on being loosened by some agent corresponding to the stimulus falls, whereupon work must be done to return it to its initial elevation. It is this operation of return that is involved in the nerve oxidation and the output of carbon dioxide. Further, the nerve impulse is a change that progresses over the substance of nerve not by the spread of heat but probably by a change in electrical potential, as indicated by Lillie. In any event, Parker agrees with Forbes that the purely physical conception of the nerve impulse has ceased to have much weight, and with Hill that chemical change interposes somewhere in it.

1. Hill, A. V.: The Absence of Temperature Changes During the Transmission of a Nervous Impulse, J. Physiol. **43**: 433, 1911.
2. Parker, G. H.: The Production of Carbon Dioxide by Nerve, J. General Physiol. **7**: 641 (May 20) 1925.
3. Tashiro, S.: Carbon Dioxide Production from Nerve Fibers When Resting and When Stimulated, Am. J. Physiol. **32**: 107, 1913.

DOES INFANT WELFARE WORK PRESERVE THE UNFIT?

The future of the human race is the theme of lively speculation, with depressing forecasts considerably outnumbering the alluring vistas. A favorite subject for lamentation concerns the alleged deterioration, present and prospective, brought about by measures designed to save human life. In the words of one who considers that mankind stands at the crossroads:

> Successful efforts to lower infant mortality will result in a somewhat higher child mortality; nevertheless, lowered death rates of infants and children and young mothers will eventually bring past the reproductive age many weaklings who would otherwise have left no offspring. In other words, increased medical skill and the spread of preventive methods will tend to result in a race weaker naturally than before [E. M. East].

This somewhat jaunty deliverance apparently finds support in certain statistical analyses of infant and child mortality, notably those by Pearson and his colleagues; other analyses are distinctly contradictory.

If infant welfare work is essentially dysgenic, then the sooner the fact is established the better. Even superficially, however, many facts warn against the hasty assumption that the saving of the lives of babies interferes with the action of natural selection. Germs are not respecters of germ plasm. There is not any reason to believe that babies with an outfit of qualities of great potential value to the human race are any more or any less resistant to milk-borne typhoid or scarlet fever than babies destined to be hewers of wood and drawers of water. On the purely physical side, evidence is lacking to indicate that the infant whose life is saved by suitable feeding or by protection against excessive heat or cold is "less fit to survive" than the infant fed with partly decomposed milk or swaddled in thick garments in midsummer and allowed to be chilled in winter. Spartan methods of upbringing may conceivably weaken those that survive and render them less resistant to the hazards of adult life. A pneumococcus-carrying osculation seems to the casual observer an accident that an infant should be protected from rather than a desirable step in the process of natural selection. It has certainly never been shown in a convincing way that exposure to disease germs is a method of evolving efficient and happy races or indi-

viduals. It would be a *reductio ad absurdum* to suggest that one interferes with natural selection when one requires that dogs be muzzled to prevent the spread of hydrophobia.

While considerations of this sort are of course familiar enough and have had sufficient weight with the average human being to prevent the abandonment of infant welfare measures, it is obviously desirable to secure a more compelling variety of evidence. An important study of the statistical relations between mortality in infancy and in the subsequent years of life [1] apparently furnishes information of this character. An examination of the infant and child death rates in Chicago over a period of twenty-six years with calculation of the correlation coefficients indicates, so far as these data permit a judgment, that the effects of infant welfare work have not been dysgenic as alleged by Pearson, Snow and some other statisticians. The positive values of correlation coefficients as computed by Falk demonstrate that in Chicago the mortality has generally been high in the subsequent years of childhood among children that survived the year of infancy in a period in which infant mortality was high, and vice versa. The probable interpretation of this relation is that infant welfare work not only achieves the direct saving of life, but in addition operates to preserve subsequent bodily fitness and resistance by reducing the incidence of illness that injures when it does not kill. The study is significant and will be especially welcomed by the large body of nonmathematical readers who, themselves unable to refute the arguments of Pearson and his followers, have yet felt that the last word has not been said.

Current Comment

THE CASE METHOD OF TEACHING PATHOLOGY

In a comment on methods of teaching pathology at Queen's University, Miller [2] advocates reports by students of ten cases, five in each of the final two years. Apparently the only contributions by the students to such reports are from studies they make of the related literature and of histologic changes, the clinical manifestations and alterations found post mortem being assembled observations and deductions made by others, presumably their teachers. If, under supervision and guidance, the students should also make clinical, postmortem and bacteriologic examinations for each instance of disease reported, much more could be urged in favor of the "case method" of study. The progress of medical education away from didactic instruction and demonstration is exceedingly slow. Any practicable innovation which, under experienced investigators and teachers, will bring about exercise by medical students of their own powers of observation and study of disease, obviously represents a definite improvement. When students present such studies at class meetings and they are fully discussed, the development by students of comprehension of disease and of mastery of the technic of its exposure becomes exceedingly gratifying.

1. Falk, I. S.: J. Prev. Med. **1**: 125, 1926.
2. Miller, J.: The Pathological Conference and the Case Method of Teaching Pathology, Canad. M. A. J. **16**: 822, 1926.

YAWS CLINICS IN THE PHILIPPINES

The campaign to control yaws, described in the report of the Philippine Health Service,[1] continues to meet with success. About 21,000 cases were treated with neoarsphenamine during 1924 in twenty-five clinics established in the more heavily infected provinces. The people of five provinces are heavily infected, and in Batames the incidence of yaws was 95.95 per thousand of the population. The remarkable improvement following treatment made the clinics popular, and in at least one place soldiers were necessary to keep order among the hundreds of victims, each of whom wanted to be treated first. Some patients traveled for several days to attend the clinics rather than to wait a few weeks for the clinic to arrive in their neighborhood. Yaws resembles syphilis in its clinical manifestations. The mortality rate is low, but the disease is loathsome, disabling and quite contagious. Fortunately, campaigns to control yaws are under way in various tropical countries. Our Netherlands correspondent stated recently that a million injections of neoarsphenamine were made in the campaign in the Dutch East Indies between 1919 and 1924, and that in some regions the disease may be regarded as completely eradicated. The campaign in the Philippines should continue until results equally good have been attained there.

1. Official Report, Philippine Health Service, for 1924.

SPAHLINGER TREATMENT OF TUBERCULOSIS

In several replies to persons who have written to THE JOURNAL requesting information concerning the Spahlinger treatment of tuberculosis, a secret remedy developed by Henri Spahlinger of Geneva, Switzerland, it has been said that the method must not be considered as in any way established and worthy of scientific consideration at this time. Notwithstanding the fact that his remedy was secret and that evidence in its favor had not been made generally available, Spahlinger and his friends have repeatedly attempted to secure government endorsement of the preparation in England, and to secure funds for its development. Now Dr. Thomas Nelson makes available in the London *Lancet* the records of ten patients injected by Spahlinger personally with this remedy between November, 1913, and November, 1914. Some of the patients had received as many as twenty-nine injections of the remedy, and the large majority had received more than twenty. Of the ten patients concerned, eight had tuberculosis of the lungs, one tuberculosis of the spine, and one lupus. After ten years the patient with lupus and the one with tuberculosis of the spine remained alive, although it is of course generally well known that these forms of tuberculosis are not especially fatal. One of the patients with tuberculosis

of the lungs could not be traced, but of the remaining seven all were dead, two dying in the following year and only one living as late as 1921. Incidentally, Dr. Nelson emphasizes the fact that these cases were all of the rather advanced chronic type, but not immediately and especially hopeless. They were the type of cases in which an arrest of the disease with a return to reasonable health and life might have been expected if there were any advantages in the Spahlinger preparation. The evidence in favor of the Spahlinger method of treating tuberculosis is not sufficient at this time to warrant an extensive trial. The burden of proof is still on Spahlinger, who should at least show that in a considerable number of cases studied under controlled conditions the remedy will accomplish more than can be accomplished by the method of treatment now practiced in well regulated institutions for the treatment of tuberculosis.

EXPANSION OF THE WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA

"Natural Guardians of the Race" is the title of a prospectus of new buildings for the Woman's Medical College of Pennsylvania, for which one and one-half million dollars is asked. The prospectus maintains that there are four fields of medicine for which women are particularly well qualified: child care in its various aspects; care of women, with particular attention to gynecology and obstetrics; foreign medical missionary work, especially in the Orient, where male physicians do not have free access to the female population; and research, with its necessity for painstaking detail. Medical education for women in America began in 1848, when Elizabeth Blackwell received her degree at Geneva, N. Y. In those days there was need of a medical school that would admit women, so members of the Society of Friends established the Woman's Medical College in Philadelphia. Forty students matriculated the first year, and eight were graduated in the first class of 1852. Only eight of the seventy class A medical schools in the United States now exclude women. Among the reasons for the continued existence and for the continued expansion of the only medical college that is now maintained exclusively for women is the fact that high grade facilities for the training of physicians in this country have not kept abreast of the need for graduates in medicine. The Woman's Medical College is an important unit in the national equipment available for medical study, and it has maintained its standards "along the recognized lines of progress." Moreover, in a medical school maintained exclusively for women, the curriculum may stress those subjects in which women are particularly qualified. Not only many of our own women students but also foreign women, particularly orientals, who are not accustomed to coeducation, find the atmosphere congenial in a school that is not coeducational. With these claims the "Greater Woman's Medical College" solicits support.

Physical or Health Education.—Physical education, or health education, is education in general, approached from the viewpoint of the necessary physical support to intellectual and moral excellence.—Reisner: Physical Education in Our Changing Philosophy of Life, *Discobolus*, March, 1924, p. 8.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Dr. Welch Reappointed.—The board of censors of the State Medical Association of Alabama, at a meeting in Montgomery, January 10, unanimously reelected Dr. Samuel W. Welch state health officer for a period of five years. Dr. Welch has been the state health officer of Alabama since 1917. He is an ex-president of the state medical association, a member of the Council on Medical Education and Hospitals of the American Medical Association, and prominent in other state and national health councils.

CALIFORNIA

"Sub Office of the Great Physician."—James A. Biglow, 1435 South Central Avenue, Los Angeles, was arraigned, Nov. 30, 1926, on a charge of violating the medical practice act; he pleaded guilty, it is reported, and was sentenced to 180 days in jail, the sentence being suspended for two years. Biglow, who is colored, opened an office recently at the above address with a sign on the window reading "Sub Office of the Great Physician, All Manner of Disease Cured" and so forth. A sign on the door read "Dr. J. A. Biglow, Physician"; a sign on the wall, "Why Remain Sick? I Can Cure You," and a sign on his desk, "Dr. Biglow." He claimed to be a faith healer and to instruct people in "how to take care of themselves." A list in the front office of ailments for which Biglow guaranteed a cure began with asthma and ended with "rheumatism and fat fiks."

Health Officers Appointed.—The state board of health reports the appointment of the following health officers: Dr. Roland H. Prien to be health officer of Gilroy to succeed the late Dr. James W. Thayer; Dr. Alvy N. Crain, health officer of Yolo County, where a full-time unit was recently organized; Dr. Kenneth D. Cook, city health officer of Maricopa, succeeding Dr. Robert D. Mace; Dr. Frank M. Lawson, city health officer of Willows, succeeding Dr. Jerome L. Rawhauser; Dr. James Sanderson, health officer of Sierra County, to succeed Dr. Wallace B. Hardie; Dr. Etta S. Lund, health officer of Alpine County, vice Dr. William J. Van den Berg. The Orange County health department has taken over the activities of the La Habra city health department and of the Huntington Beach city health department; the Monterey County health department has taken over the work of the King City health department; the Placer County health officer has taken over the work of the Rocklin City health department; the health officer of Mendocino County has taken over the work of the city health officer of Potter Valley.

DISTRICT OF COLUMBIA

Personal.—William E. Ritter, Ph.D., president of Science Service, first director of the Scripps Institute for Biologic Research, La Jolla, Calif., and president emeritus of zoology, University of California, was honored at a dinner at the Cosmos Club, recently, on the occasion of his seventieth birthday.

FLORIDA

Society News.—At the meeting of the Orange County Medical Society, Sanford, recently, members of the society from Seminole County decided to form an organization of their own; Dr. Samuel Puleston, Sanford, was elected president of the temporary society; Dr. John W. Martin, Oviedo, vice president, and Dr. Charles L. Park, Sanford, secretary-treasurer.

Hospital News.—Dr. Joseph Halton and Honore and Potter Palmer, of Sarasota and Chicago, respectively, have given to the Sarasota Hospital a complete roentgen-ray department; this is said to be one of the most modernly equipped departments of the state.——Dr. Lydia Allen DeVilbiss, Buena Vista, has been appointed medical adviser to women at the University of Miami.

Arrests in Diploma Mill Investigation.—Henry D. Sbordi and Lloyd Bruce Riley, both of St. Petersburg, were arrested, Dec. 29, 1926, it is reported, in connection with the alleged

diploma mill operated in Tampa by Dr. George A. Munch. Sbordi and Riley are accused of practicing medicine with diplomas purchased from Dr. Munch. The arrests were made by Postoffice Inspector Ward and Deputy U. S. Marshal Peter. Seven persons have been arrested thus far in connection with this investigation, and other arrests are expected.

ILLINOIS

Society News.—At the Dec. 9, 1926, meeting of the Pike County Medical Society, Barry, Dr. William Engelbach, St. Louis, spoke on "Endocrine Disorders and Their Relation to Other System Diseases"; Dr. J. E. Miller, Quincy, on "Surgery in Relation to Neurasthenic Conditions," and Dr. William E. Shastid, Pittsfield, "A Backward Glance."——Dr. Jesse R. Gerstley, Chicago, addressed the Christian County Medical Society, Dec. 21, 1926, on "Preventive Medicine in the Practice of Pediatrics," and the Elgin Physicians Club, January 10.

Chicago

Joint Meeting with Dentists.—At the joint meeting of the Chicago Medical and Dental Societies, Drake Hotel, January 26, Thomas B. McCrum, D.D.S., Kansas City, will show a new health motion picture; Dr. Hugh S. Cumming, surgeon general, U. S. Public Health Service, will speak on "The Community's Responsibility for Health Education," and Dr. Thomas L. Gilmer, Chicago, on "Some Diseases of the Soft Tissues of the Mouth, Differentiating Between Those of Primary and Those of Secondary Origin." There will be a dinner to the presidents and secretaries of the societies and their branches at 6 o'clock at the Drake in room C.

Ochsner Memorial Meeting.—The northside branch of the Chicago Medical Society will hold a memorial meeting in commemoration of the late Dr. Albert J. Ochsner at the John B. Murphy Memorial Building, 48 East Erie Street, February 3, 8 o'clock. Dr. Walter W. Chipman, Montreal, Canada, will speak on "A Personal Appreciation of Ochsner"; Dr. William J. Mayo, Rochester, Minn., on "Ochsner's Work," and Dr. Allen B. Kanavel, Chicago, on "Surgical Progress." This is the first lecture of the Ochsner Memorial lectures established by the northside branch. All members of the Chicago Medical Society and their friends are cordially invited.

Lying-In Hospital Affiliates with University.—The Chicago Lying-In Hospital, 426 East Fifty-First Street, of which Dr. Joseph B. DeLee has been chief of staff since its establishment in 1899, has become affiliated with the University of Chicago, it was announced, January 11. It is proposed to erect a new $1,000,000 hospital building at the university west of the New Albert Merritt Billings Hospital, and to sell the present hospital and use the proceeds for an endowment fund. The new hospital will provide 180 beds, a $100,000 laboratory is to be built by the university and an isolation pavilion, and its staff will be members of the department of obstetrics and gynecology of the university. A campaign to raise $1,000,000 for the new building will be undertaken by the board of directors, the president of which for the last eighteen years has been Mrs. Kellogg Fairbank. Mrs. Fairbank is reported to have said that the affiliation means a continuation of the "superb work done by the hospital during the last thirty years, and a guarantee that the present high standards of its medical directors will be continued indefinitely."

Special Society News.—The Chicago Laryngological and Otological Society will meet, February 7, at the Stevens Restaurant, 16 North Wabash Avenue. The presentation of clinical material will be at 6 o'clock, dinner at 6:30, and the scientific meeting later. Dr. Elmer L. Kenyon will speak on "Recent Knowledge Concerning the Laryngeal Talking Function," and Dr. G. Henry Mundt on "Value of the Roentgenogram in Sinus and Mastoid Surgery."——The Chicago Urological Society will meet, January 27, at 44 East Erie Street, and will be addressed, among others, by Dr. John H. Morrissey, Jr., New York, on "Seminal Vesicle and Prostatic Drainage in Acute and Chronic Infection."——The Chicago Society of Internal Medicine will meet at the City Club, 315 Plymouth Court, January 24; Dr. Aaron Arkin will speak on "Periarteritis Nodosa, a Clinical and Pathologic Study"; Dr. Arno B. Luckhardt and T. Koppanyi on "Vasomotor Action from Hypodermically Injected Adrenalin," and Dr. Merritt Paul Starr on "Simultaneous Kidney Function Tests with Especial Reference to the Urea Concentration Factor."——Dr. Henri Fredericq, Liege, Belgium, will lecture, January 27 and January 28 at 4:30 p. m. at the new Physiology Building, Fifty-Eighth Street and Ingleside Avenue, University of Chicago, room 133, on "Humoral Transmission of Nervous Action" and "Chronaxy, a Modern Method of Testing Excitability of Living Tissue."——The Chicago Neurological Society and the Chicago Orthopedic Club held a joint meeting at the Drake Hotel, January 20.

INDIANA

All Dogs Quarantined.—The state board of health ordered a quarantine against all dogs in the state, effective January 10, to continue for 120 days; each dog must be muzzled or tied up. The order was issued at a special meeting of the board to consider the prevalence of rabies. It appears that from Jan. 1 to Dec. 1, 1926, among 661 animals examined, 340 were found positive for rabies, and in the same period, 375 persons in Indiana were given treatment. This was a more serious situation than had existed in the state for several years.

Academy of Ophthalmology and Oto-Laryngology.—At the annual dinner of the Indiana Academy of Ophthalmology and Oto-Laryngology, Indianapolis, January 12, Dr. Burton W. Egan, Logansport, was elected president for 1927. This was the tenth annual meeting of the academy. Dr. Lee W. Dean, Iowa City, Iowa, spoke on "Paranasal Sinus Infection in Infants and Young Children." There were clinics at various hospitals, and in addition to a number of speakers from Indianapolis, were Drs. Karl T. Brown, Muncie, and Claude A. Robison, Frankfort.

Educational Diphtheria Campaign.—A meeting held in the office of the state board of health, Indianapolis, Dec. 1, 1926, was attended by representatives of the state medical association, the state parent-teacher association and the state department of health, to discuss ways and means to inform the people of Indiana of the importance of protecting children against diphtheria by immunization; it was agreed that a cooperative effort should be made to inform all the parents of the state, with a view of securing protection against diphtheria by immunization of as many children as possible of preschool age. The support of all local organizations in the state-wide educational campaign is requested. The ultimate aim will be to have the public consider immunization against diphtheria as a routine matter, and to have it carried out in early infancy.

IOWA

Society News.—The Lee County Medical Society held its semiannual meeting at the Iowa State Prison, Fort Madison, Dec. 12, 1926; music was furnished, during the banquet, by the prison orchestra. The society voted to increase its dues to $15 a year.

Quack Lovell Fined.—William Lovell, a so-called Indian herb doctor of Hayesville, Keokuk County, was found guilty by a jury, January 7, it is reported, of practicing medicine without a license, and was fined $400 after a motion for a new trial had been overruled.

Dr. Hanson Guilty of Practicing Without a License.—A jury returned a verdict of guilty on a charge of practicing medicine without a license, Dec. 30, 1926, it is reported, in the case of Dr. Clarence Henry Hanson of Eagle Grove. Dr. Hanson's license was revoked by the state board of health, Sept. 24, 1924, for "gross, immoral and unprofessional conduct," and on appeal the revocation was upheld by the state supreme court. He was sentenced in June, 1924, to serve one year and a day in Fort Leavenworth Prison for violation of the Harrison Narcotic Law.

MASSACHUSETTS

Personal.—Dr. Charles S. Woodall has been appointed physician to the Walter E. Fernald State School at Waverly.——Dr. Arthur B. Emmons became associate secretary of the American Public Health Association, Dec. 1, 1926.——Dr. Harvey Cushing, Boston, addressed the annual meeting of the Association for Research in Nervous and Mental Diseases, Hotel Commodore, New York, Dec. 28, 1926.——Dr. Louis E. Phaneuf has been elected an associate member of the Obstetrical and Gynecological Society of Paris and an honorary member of the Gynecological and Obstetrical Society of Belgium.

Society News.—Dr. Howard M. Clute, Boston, addressed the semiannual meeting of the Essex North District Medical Society, Haverhill, January 5, on "Clinical Differentiation and Treatment of Thyroid Disease" with lantern slides, and

Dr. Philip Hammond, Boston, on "Some Acute Diseases of the Ear, Nose and Throat of Interest to the General Practitioner."——Dr. John B. Hawes, 2nd, addressed the Trudeau Society of Boston, January 11, at the Boston Medical Library on "Preventorium Problems."——Prof. Henri Fredericq, of the University of Liege, Belgium, addressed the Harvard Medical Society, January 11, on "Humoral Transmission of Nervous Action."

Report of Tuberculosis Survey.—As a result of criticism of the administration with regard to tuberculosis by the Boston Tuberculosis Association, the mayor of Boston commissioned Dr. Haven Emerson, New York, to study and report on the local conditions. Dr. Emerson's report was recently submitted to the mayor who referred it to the City Hospital trustees for consideration. The chief recommendations in the report are said to be that the City Hospital trustees be given control of the consumptives' hospital, in place of the separate group of trustees now administering the Mattapan Institution and its outpatient department, and that a new deputyship at a salary of $6,000 be created under the health commissioner to be known as the chief of the division of tuberculosis; also that an assistant superintendent should be appointed for the tuberculosis hospital at Mattapan, and that the health commissioner be a member ex officio of the City Hospital trustees. The Mattapan Hospital should be enlarged by 100 beds to provide treatment for more early cases of tuberculosis, and more district tuberculosis dispensaries should be established. The health commissioner should more vigorously enforce the reporting of tuberculosis cases by physicians. The death rate from tuberculosis apparently is higher in Boston than in the state as a whole, and higher than that of other large cities in the country, except those two in which the negro population is much higher than in Boston—Philadelphia and Baltimore.

MINNESOTA

Society News.—Dr. Verne S. Cabot addressed the Minneapolis Surgical Society, January 6, on "Surgery in Gastric Ulcer," and Dr. William P. Herbst, Jr., on "Diverticula of the Duodenum."——Dr. Walter C. Alvarez, Rochester, addressed the Southwestern Minnesota Medical Society, Worthington, recently, on "Diagnosis of Gastric-Intestinal Disease from a Good History." Dr. Alfred G. Chadbourn, Heron Lake, was elected president. The next meeting will be at Fulda.——Dr. Jesse E. Long, who has practiced medicine for forty-five years in Minneapolis, and Mrs. Long left, January 19, for a trip around the world.——Dr. David A. Stewart, Manitoba, Canada, addressed the Hennepin County Medical Society, Dec. 8, 1926, and also the Minnesota Trudeau Society, the Minnesota Sanatorium Association, and the state board of control. Dr. Stewart is vice president of the National Tuberculosis Association.——Dr. Hiram Winnett Orr, Lincoln, Neb., will give the first annual Mayo Foundation lecture in orthopedic surgery, January 25, on "Osteomyelitis."

MONTANA

Personal.—Dr. Imre Dobos, pathologist at St. James Hospital, Butte, has been appointed to the staff of the Colorado State University School of Medicine at Denver, and will assume his new duties shortly. Dr. Dobos is a graduate of the University of Vienna, and came to Butte about five years ago.

NEW MEXICO

Protests Against Narcotic Restrictions.—The Pecos Valley Medical Association, at its annual meeting at Carlsbad, unanimously voted to protest against the proposed legislation in Congress to change the Harrison Narcotic Law so as to place further hardships on reputable practitioners of medicine, and to send to each member of Congress a copy of the resolution adopted. Four additional counties of the state were voted into the society—Otero, DeBaca, Quay and Guadalupe. Dr. Robert L. Bradley, Roswell, was elected president, and Dr. Charles F. Beeson, Roswell, secretary, reelected.

NEW YORK

Health at Buffalo.—Telegraphic reports to the U. S. Department of Commerce for the week ending January 8 from sixty-eight cities with the total population of about 30 million indicate that the highest mortality rate (24.4) was for Buffalo, and that the rate for the group of cities as a whole was 14.7. The mortality rate for Buffalo for the corresponding week last year was 16.8, and for the group of cities, 15.3.

New State Psychiatric Institute.—At the final meeting of the state hospital commission, Dec. 30, 1926, contracts for the construction of the new state psychiatric hospital and institute to be built on a site provided by Columbia University in connection with the new medical center at One Hundred and Sixty-Eighth Street and Riverside Drive, New York, were awarded. The excavating has been completed on a separate contract, and the structure is to be finished by April 1, 1928. The building will have eleven stories, and 210 beds for patients, with one floor for children and almost two whole floors for the outpatient department; there will be facilities for occupational therapy with work shops, light therapy, hydrotherapy, electrotherapy and other forms of treatment for mental cases. There will be a tower of nine stories for the library, physicians' offices, research laboratory and record rooms. The teaching facilities of the institute will be available to the College of Physicians and Surgeons of Columbia University and others, and for postgraduate instruction for physicians.

Society News.—Dr. John H. Stokes, Philadelphia, addressed the annual meeting of the New York Academy of Medicine, January 6, on "Some Clinical Problems in the Application of the Wassermann Reaction." Dr. Samuel A. Brown, the retiring president, and Dr. Samuel W. Lambert, the incoming president, gave addresses.——Dr. Alfred Adler, Vienna, gave an address before the section on neurology and psychiatry of the New York Academy of Medicine, January 11, on "The Feeling of Inferiority and Its Compensations." Dr. Robert Sonnenschein, Chicago, addressed the section on otology, January 14, on "The Philosophy of the Older Tests of Hearing."——Francis G. Benedict, Sc.D., director of nutrition of the Carnegie Institution in Washington, delivered an illustrated lecture at the Scientific Institute for Alimentary Hygiene in Paris, on "Recent Research on Metabolism in Man and Animals."——Dr. William H. Stewart addressed the Medical Society of the County of New York, Dec. 27, 1926, on "Cholecystography."——The Seneca County Medical Society has decided to publish its history in book form; the report of the committee recently accepted by the society covers the period from 1810 to 1926. Dr. Lewis A. Gould, Interlaken, was elected president of the society for 1927.——Dr. Francis Carter Wood, Crocker Institute for Cancer Research, New York, addressed the Onandaga County Medical Society on "The Blair-Bell Lead Treatment for Cancer."——The annual dinner of the Yates County Medical Society at Penn Yan was given in honor of Dr. Byron B. Havens, who has practiced medicine in that village for fifty years.

New York City

Death Rate Higher in 1926.—The city health commissioner has made public a report indicating in a tentative summary of 1926 health statistics that the death rate increased from 12.23 in 1925 to 12.84 per thousand of population in 1926, and that the birth rate dropped from 21.91 to 21.19 per thousand population. The important causes of increasing the death rate were influenza, which was particularly prevalent the first three months of the year; pneumonia; measles, which caused 575 more deaths than in 1925; old age, which increased from 184 in 1925 to 244, and automobile accidents which increased from 1,022 to 1,060. There was a decrease from 942 to 909 in suicidal deaths; from 201 to 110 from typhoid, from 309 to 221 from whooping cough, and a reduction in the diphtheria deaths from 668 to 476, a difference of 192.

Academy Library Open to Public.—The library of the New York Academy of Medicine exists for the public at large as well as for fellows of the academy. Physicians who are not fellows may come to the library between 9 and 2 o'clock, and if necessary, these hours may be extended. Medical students may use the library from 9 to 10:30 if they bring a letter from the dean of their school. Such persons have practically all the privileges of the fellows except that of taking books to their homes, and this may be granted on the payment of a fee which makes them library members. The library has more than 143,000 books, and about 912 current periodicals. There are seven study rooms, primarily for fellows, for which there is an assessment of $15 a month for each room. These rooms may be had at the same rate for library members if such arrangement is possible.

Court Enjoins Rival Tuberculosis Association.—For the first time the National Tuberculosis Association felt obliged recently to defend its rights against another organization in the use of its emblem. Court action was instituted against the Association for the Relief of Tubercular Patients which had sent out seals by mail and was asking for contributions. The case came up for a hearing before the New York Supreme

Court. The court issued an order enjoining the Association for Relief of Tubercular Patients, Inc., or its agents or representatives of any kind from (*a*) using a cross in any form or design in connection with tuberculosis; (*b*) using in any way a seal sale method of collecting funds in connection with tuberculosis; (*c*) from doing anything which might be calculated to deceive the public as to the identity of the corporation or to lead the public to believe that the corporation is in any way connected with the National Tuberculosis Association.

Personal.—Dr. Thomas W. Salmon addressed the annual meeting of the Association of the Alumni of the College of Physicians and Surgeons, January 18, at the Faculty House, Columbia University, on "Psychiatry and the General Practitioner."——Dr. Joseph W. Miller has been appointed chief of the laryngoscopic and bronchoscopic clinic, outpatient department, Beth Israel Hospital.——Dr. George H. Kirby has been elected president of the New York Neurological Society for the ensuing year.——The Rockefeller Institute for Medical Research, New York, announces the appointment to its scientific staff in the division of biophysics of Ralph W. G. Wyckoff as associate member and Sterling B. Hendricks as assistant, formerly of the geophysical laboratory of the Carnegie Institution of Washington.——Dr. Wilson G. Smillie, of the International Health Board, addressed the Rockefeller Institute for Medical Research, New York, January 7, on "Influence of Natural Factors in the Distribution of Disease."

OHIO

Personal.—Dr. Emmett L. Hooper, assistant physician at the Athens State Hospital for Insane, has been appointed superintendent of the institution for the feebleminded at Orient to succeed Dr. Wilhelm H. Vorbau, who was recently appointed superintendent of the Lima State Hospital.——Dr. Clifford C. Legler has been appointed city physician of Portsmouth to succeed Dr. Trebor C. Crawford, resigned.——Dr. James G. Blower, Akron, has been elected president of the state medical board.——Dr. Herman J. Peter, Ragersville, recently celebrated his eighty-fourth birthday; Dr. Peter has practiced medicine for more than fifty years in that community.——The freshman class of the University of Cincinnati College of Medicine recently gave a dinner to celebrate the birthday of Dr. Oscar V. Batson, assistant professor of anatomy.——Dr. Edwards H. Porter, Tiffin, recently resigned after eighteen years of service as secretary of the Seneca County Medical Society.——Dr. W. R. Carle, Perry, has been appointed health commissioner of Lake County to succeed Dr. Edward J. Schwartz.

PENNSYLVANIA

Witness Claims Chiropractor Broke Her Leg.—A jury in criminal court at Butler, Dec. 14, 1926, found chiropractor W. H. Jobe guilty of practicing medicine and surgery without a license, it is reported; he was sentenced to six months in the county jail and to pay a fine of $100. Among the witnesses was a woman whom Jobe treated for rheumatism. She testified that, while treating her, Jobe twisted her leg around the corner of the bed until the bones cracked, and that she was then cared for by physicians. Among other witnesses was the advertising manager of a local newspaper, from the files of which advertisements inserted by chiropractor Jobe were read.

New Hospital Administrative Plan.—The Harrisburg Hospital has organized its staff under a new plan of administration whereby responsibility will be divided among three men, one in the surgical division, another in the medical division and a third representing the board of managers. Members of the staff will be retired at 65 years of age, and will then automatically become consultants. Dr. John F. Culp has been appointed head of the surgical division; Dr. John B. McAlister, head of the medical division, and Dr. Harvey F. Smith as representing the board of managers. In accordance with the new by-laws concerning retirement, Dr. David S. Funk, dean of the staff, and Dr. Harry B. Walter, vice dean, have retired, full staff privileges being continued.

Society News.—Dr. Pascal Brooke Bland addressed the Lancaster City and County Medical Society, Lancaster, January 5, on "The Strategy of Obstetrics."——Dr. Thomas McCrae, Philadelphia, addressed the Berks County Medical Society, January 11, on "Colitis."——Dr. Joseph V. Klauder, Philadelphia, addressed the Reading Medical Society, recently, on "The Commoner Skin Diseases with Reference to Differential Diagnosis."——Various health groups of Erie County have been consolidated into a public health association following a mass meeting, which was addressed by Dr. Charles H. Miner, state health officer, and others. Dr. Katherine H. Wright was elected president.——Dr. Joseph C. Doane, Philadelphia, addressed the Northumberland County Medical Society, Sunbury, January 5, on "Pericarditis."

Philadelphia

Gifts for Medical Work at the University.—At the dinner conference of the alumni of the University of Pennsylvania, Josiah H. Penniman, Ph.D., president, provost and professor of English literature of the university, announced a contribution of $250,000 from the Carnegie Corporation for the endowment of medical research, and a gift of $25,000 from Charles H. Ludington for research in the Henry Phipps Institute. The gift of the Carnegie Corporation is not applicable to the items of the medical campaign which were discussed at the conference (THE JOURNAL, January 8, p. 108).

Accidental Deaths.—A report of the Citizens' Safety Committee on accidental deaths in Philadelphia during 1926 shows that the most noticeable increase in the number of deaths was in highway accidents. There was a decline in the number of industrial deaths and of railroad accidents, and an increase in the number of accidents about the home. The total number of fatal accidents for the year was 1,075, as compared with 1,004 for the previous year. The highway fatalities due to vehicles increased from 312 in 1925 to 368 in 1926. The fatal accidents in and around the home increased from 404 to 425. The fatal accidents in industrial plants decreased from 170 to 159, and those on railroads from thirty-nine to twenty-seven.

Special Society News.—Dr. Ralph A. Fenton, Portland, Ore., addressed the Philadelphia Laryngological Society, January 11, on "Recent Vaccine Therapy in Otolaryngology."——Dr. Norman L. Knipe gave the address of the retiring president before the Obstetrical Society of Philadelphia, January 6; among others, Dr. George M. Laws read a paper on "Technic of Dilation of the Ureter."——Dr. Willis F. Manges addressed the Philadelphia Roentgen Ray Society, January 6, on "Findings in the Chest of Patients Suffering with Asthma."——Dr. John O. Bower, among others, addressed the College of Physicians of Philadelphia, January 5, on "Cause and Prevention of the Increasingly High Mortality in the Acute Surgical Abdomen."——Dr. Damon B. Pfeiffer addressed the Philadelphia Academy of Surgery, January 3, on "Chronic Gastric Ulcer Perforating into the Spleen."——Dr. Joseph Stokes, Jr., addressed the Philadelphia Pediatric Society, January 11, on "Facts and Fictions Concerning Acid Milks in Infant Feeding."——The presidential address before the Philadelphia Psychiatric Society was delivered January 14 by Dr. Edward A. Strecker on "A Psychiatrist's Dream."——The presidential address before the Pathological Society of Philadelphia was delivered, January 11, by Dr. Eugene L. Opie on "The Cytology of the Pancreas and Its Relation to the Endocrine Function of the Gland."

RHODE ISLAND

Maternity Hospital Opened.—The new building of the Lying-In Hospital, Providence, was formally opened, Dec. 15, 1926. About a thousand persons inspected the building, among whom were many prominent in the civic, industrial and medical life of the community. The hospital, which will care for all classes of patients from a financial standpoint, was made possible by contributions from a large number of persons.

WASHINGTON

Hospital News.—Mr. Hugh C. Wallace, formerly U. S. ambassador to France, has donated an endowment of $10,000 to the Tacoma General Hospital, Tacoma, in memory of his son.——The St. Joseph's Hospital, Bellingham, is planning to construct a $100,000 addition to be known as the Compton Pavilion.

Dr. Silverberg Released—Faces Deportation.—Dr. Arvid C. Silverberg, formerly of Seattle, has been released from the federal prison at Alcatraz Island, California, where he had been in confinement, it is reported, since about Jan. 9, 1926, following conviction as a draft evader. According to the Oakland *Tribune*, Dr. Silverberg now faces deportation to Finland (THE JOURNAL, Jan. 23, 1926).

Personal.—Dr. Virgil K. Hancock, Seattle, has been appointed president of the Farm Home for Children at Lacey.——Dr. David Livingstone, Fort Steilacoom, has been chosen

president of the newly organized Centralia Academy of Medicine and Surgery.——Dr. Elmer E. Langley, Spokane, flight surgeon of the One Hundred and Sixteenth Observation Squadron, has been appointed by the U. S. Department of Commerce to examine civilian aviators in the Spokane district.——Dr. Charles C. Tiffin has been appointed superintendent of the county hospital, Seattle.

Society News.—Dr. John M. Blackford, Seattle, addressed the Skagit County Medical Society, Dec. 1, 1926.—The Chelan County Medical Society recently adopted a resolution opposing the unregulated establishment of medical clinics by philanthropic and fraternal organizations, maintaining that such clinics should be held under the auspices of the county medical society.——At a meeting of physicians in Everett, Nov. 26, 1926, plans were made to administer toxin-antitoxin, free of charge, to school children of the city. The meeting was occasioned by an outbreak of diphtheria in Everett.——Dr. Frank W. Lynch, professor of obstetrics and gynecology, University of California Medical School, will address the annual meeting of the Seattle Surgical Society, January 21-22.——At the quarterly meeting of the Skagit County Medical Society, Sedro-Woolley, the speakers included Dr. Harry G. Willard, Tacoma, president of the state medical society; Dr. Ottar Thomle, Everett, president of Snohomish County Medical Society, and Dr. Roger S. Anderson, Seattle.——Dr. Allison T. Wanamaker was elected president of the King County Medical Society, Seattle, January 3, and Dr. Warren W. Bell, Seattle, secretary.

Snohomish County Celebration.—The annual banquet of the Snohomish County Medical Society was held at Everett, Dec. 7, 1926, with Dr. Ottar A. Thomle, the retiring president, as toastmaster. A framed picture of Dr. William C. Cox, a veteran physician of Everett, was presented to the medical library as a testimonial of the esteem of his colleagues; Dr. Harry G. Willard, Tacoma, president of the state medical association, and about twenty other prominent physicians from other societies were special guests (THE JOURNAL, Nov. 27, 1926, p. 1839). Dr. Willard, in addressing the society, announced the policies of the state organization and asked the help of Snohomish County in providing an effective speakers' bureau. He stressed particularly the campaign of the state society in connection with the annual physical examination of apparently well persons. The president of the Health League, Dr. Adolph O. Loe, Seattle, spoke on "The City Surgeon versus the Country Surgeon"; Dr. Nathan L. Thompson, Everett, spoke on the campaign against diphtheria being made by physicians in that county; Dr. James A. Durrant, a member of the legislature from Snohomish, discussed public health legislation.

WEST VIRGINIA

The Grafton Epidemic.—The outbreak of typhoid at Grafton was reported, January 1, as amounting to 123 cases with new cases being reported daily. It was said to be the greatest typhoid epidemic on record in West Virginia. The city is without a good filtration system or a chlorination plant. The state health department is working in cooperation with the city health department to prevent the development of further cases.

WISCONSIN

Personal.—Dr. John R. Hughes, president of the staff of St. Joseph's Hospital, Dodgeville, has been appointed dean of the College of Hospital Administration of Marquette University, Milwaukee. Dr. Hughes is a graduate of Rush Medical College, Chicago, 1912.

Society News.—Dr. Daniel N. Eisendrath, Chicago, addressed the Marshfield Medical Society, January 14, on "Diagnosis and Treatment of Bladder Tumors with Especial Reference to the Significance of Hematuria."——Among others, Dr. Merle Q. Howard addressed the Medical Society of Milwaukee County, January 14, on "Personality Disorders a Forerunner of Nervous and Mental Diseases."——Dr. Cornelius A. Harper, of the state board of health, addressed the December meeting of the Columbia County Medical Society on the examination of apparently healthy persons.——Dr. Oscar Lotz, Milwaukee, addressed the Jefferson County Medical Society, Dec. 16, 1926, on periodic health examinations.——Dr. Robert Von der Heydt, Chicago, addressed the Milwaukee Oto-Ophthalmic Society, Dec. 22, 1926, at the University Club, on "Slit Lamp Microscopy."——Dr. Louis F. Jermain, Milwaukee, addressed the Waukesha County Medical Society, Dec. 1, 1926, on "Educating the Physician in Periodic Health Examinations."

WYOMING

Personal.—Dr. Robert W. Hale, Thermopolis, who has been elected to the state legislature from Hot Springs County, will be the only physician in the next legislature.——Dr. George L. Strader has been elected president of the Laramie County Medical Society for 1927.——Dr. Perry J. Clark, Powell, was elected president of the Northwestern Wyoming Medical Society, Nov. 10, 1926.

GENERAL

Reports of Influenza.—The number of cases of influenza in the United States at this time does not appear to be abnormal. There were 1,863 cases reported to the U. S. Public Health Service for the week ending January 8, as compared with 1,713 for the corresponding period last year. The outbreaks reported by the press in some European countries seem to have reached the peak and the mortality thus far has been comparatively low.

Delegates to Congress of Military Medicine.—The President has transmitted a request to Congress that an appropriation be made of $5,000 for the payment of expenses of five delegates from the United States to the Congress of Military Medicine and Pharmacy to be held in Warsaw, Poland, this year. The request is made that three of these delegates shall represent, respectively, the medical service of the war and navy departments, and the U. S. Public Health Service. The request was initiated by the government of France through a resolution adopted at the third International Congress of Military Medicine and Pharmacy held in Paris in 1925.

New Hospital Association.—The Western Hospital Association was formed during the meeting of the Northwest Hospital Association, Seattle, January 3-4. The chief function of this organization will be a yearly meeting in a western center with an intensive educational program; its primary object is the education of hospital executives. It will not attempt to replace or interfere with the established national, state or provincial hospital associations; the necessity for its formation was brought about by the distances that western executives were required to travel to the association meetings of the established hospital associations.

Fourteen More Counties Freed of Bovine Tuberculosis.—The U. S. Department of Agriculture announces that fourteen counties in ten states were added to the list of areas officially recognized as free from tuberculosis, January 3. These counties have completed official tuberculin tests of all cattle with a result of not more than 0.5 per cent reacting to the test. The total number of counties now recognized as practically free from bovine tuberculosis is 265 and nine parts of counties. The announcement states that the gradual extension of these areas is largely a matter of time, personnel and funds, and that the outlook for the present year is promising. The new counties from which bovine tuberculosis has been eradicated are: Jerome County, Idaho; Buena Vista, Louisa and Shelby counties, Iowa; Fayette and Johnson counties, Ind.; Allen County, Kan.; Roscommon County, Mich.; McLeod County, Minn.; Gosper County, Neb.; Bladen County, N. C.; Clark County, S. D., and Barron and Oneida counties, Wis.

"Orthopedic Special" to California.—The annual meeting of the American Orthopedic Association will be held in the Yosemite Valley, June 13-16. This will be the first meeting of the association on the Pacific Coast. It is planned to have an "Orthopedic Special" run over the Santa Fe, leaving Boston, June 4, and arriving at Los Angeles, June 10, via Chicago, Kansas City and Albuquerque. There will be an opportunity to visit these cities and the Grand Canyon, enroute; entertainment will be provided at Los Angeles, Friday evening, June 10, and on Saturday, the Los Angeles Orthopedic Club will provide clinics. The train will then leave Saturday evening for the Yosemite Valley for the scientific meeting. The meeting will adjourn to San Francisco, June 17, with the San Francisco Orthopedic Club as hosts. Provision will be made for those in attendance to make excursions to points of interest and to return east by whatever route the individual member desires. The committee in charge requests that all who plan to attend this meeting notify the president, Dr. James T. Watkins, Medical Building, Hyde and Bush streets, San Francisco, as soon as possible.

Senate Extends Sheppard-Towner Act with Amendment.—The U. S. Senate, January 13, passed the bill extending, for an additional two years, the provisions of the Sheppard-Towner Law. The bill passed, however, with an amendment providing that after June 30, 1929, this law shall be without

force and effect. The adoption of this amendment by the Senate is a victory for the opponents of this legislation. The bill has been quite fully debated in the Senate and as a result many facts and arguments were presented to show that this legislation is not correct in principle and that the federal government should not be permanently engaged in this work. This bill now goes to the House of Representatives, where it is expected that the Senate amendment definitely terminating the Sheppard-Towner Law on June 30, 1929, will be adopted. During the discussion in the Senate of the Sheppard-Towner bill, there was unanimously adopted by the Senate a resolution calling on the Children's Bureau at Washington to furnish the Senate with copies of all plans now being carried out under the existing Sheppard-Towner Law showing the plans which have been submitted to the several states by the bureau, and the record of action taken by the Children's Bureau with reference to each of these plans as submitted to and accepted by the states. This resolution was adopted following a statement by Senator Bingham of Connecticut that there apparently is not any public record of the arrangements which have been made with each of the states which have from time to time agreed to the proposals made to such states by the Children's Bureau. The annual conference of state directors of maternity and infancy work began at Washington, D. C., January 13, at the Children's Bureau of the Department of Labor. Eighty state representatives were in attendance from the states which are cooperating with the federal government under the Maternity and Infancy Act. Idaho, Oregon and Texas were the only states thus cooperating that were not represented in the conference. Many of those attending the conference took occasion to bring pressure to bear on members of Congress for the retention of the Sheppard-Towner Law.

Bequests and Donations.—The following bequests and donations have been announced recently:

The Frankford Hospital, Philadelphia, $6,000, by the will of the late Joseph L. Wilson.

The Good Samaritan Hospital, Portland, Ore., $10,000, by the will of the late Mrs. Elizabeth A. Glisan.

The James Whitcomb Riley Hospital for Children, Indianapolis, $10,000, by the will of Mrs. Grace K. Maring, Muncie.

The Children's Hospital, St. Paul, Minn., $35,000 from Mrs. W. H. Howard, Pasadena, Calif., and $10,000 from Mrs. C. A. Severance, St. Paul.

One hundred thousand dollars from Murray W. Sales, Detroit, for a new children's hospital in Grosse Pointe Farms, as a memorial to his three children who suffered violent deaths during the last six years.

The Niagara Falls Memorial Hospital, $50,000, in memory of her father, the late Dr. Gardiner C. Clark, by the will of the late Mrs. Elizabeth Clark Rogers.

The Lutheran Hospital of Manhattan, N. Y., New York City, $25,000, from an anonymous donor, in memory of the late Oscar Scherer.

Mount Sinai Hospital and the Jewish Hospital, both of New York, each $1,000 by the will of the late Herman Ottenberg.

Montefiore Hospital for Chronic Diseases, $5,000, and Mount Sinai Hospital, $2,500, both of New York, by the will of Regina Bondy.

New York Hospital, New York, $7,000, by the will of Theresa Irving.

The Germantown Hospital, the Presbyterian Hospital and the Kensington Hospital, all of Philadelphia, each $5,000, by the will of the late Samuel M. Clement, Jr.

Mount Sinai and Montefiore Hospitals, each $100,000; the Beth Israel Hospital, $25,000; Lebanon Hospital and Mount Sinai Hospital Nurses School, each $5,000, all of New York, by the will of the late Alexander Herman.

St. Vincent's Hospital, New York, $1,000, by the will of the late Joseph I. C. Clarke.

Hillsboro Hospital, Hillsboro, Ill., $30,000, by the will of Mrs. Carrie Holden.

The New Haven County Anti-Tuberculosis Association, New Haven, Conn., $100,000; Yale University, Dartmouth College and Leland Stanford University, each $50,000, and the Kenosha Hospital, Kenosha, Wis., $20,000, by the will of the late Charles F. Brooker, Ansonia, Conn., who was chairman of the board of directors of the American Brass Company.

Johns Hopkins University, Baltimore, $50,000, by the will of the late Julius Levy, Baltimore, half of the income to be used for the medical school of the university.

Long Island College Hospital, Brooklyn, $3,000, by the will of the late Samuel Rowland.

A special performance of "Tosca" will be given at the Metropolitan Opera House, Wednesday afternoon, February 9, for the benefit of the Flower Hospital and the New Medical College.

St. Catharine's Hospital, Brooklyn, $2,000, and St. Catharine's Infirmary, Amityville, $1,000, under the will of the late Rev. Peter Schwartz.

FOREIGN

Victim of Accidental Inoculation with Cancer Dies.—Dr. Henri Vadon, who developed a malignant growth following an accidental pricking of the palm of his hand while operating on a patient for cancer of the breast, died in December, 1926. This, it appears, is the case referred to in an editorial in THE JOURNAL, Aug. 7, 1926, p. 415, entitled "The Contagiousness of Cancer," and is, as far as known, the first case reported of accidental inoculation of a medical attendant of cancer from a patient. Dr. Vadon's left arm was amputated following the development of a tumor in the palm; he continued his duties as resident physician at the Broussais Hospital, Paris.

Government Services

Personal—Veterans' Bureau

The following changes in the medical personnel of the Veterans' Bureau have been announced recently:

Cassels, Dr. W. G., reinstated in central office, advisory group on appeals.
Crimmins, Dr. Philip P., transferred from hospital at Walla Walla, Wash., to hospital at Tacoma, Wash.
Dings, Dr. E. Martin, resigned from hospital at Memphis, Tenn.
Dwyer, Dr. Frank, appointed at hospital, Philadelphia.
Egan, Dr. Daniel E., resigned at Edward Hines, Jr., Hospital, Maywood, Ill.
Farnsworth, Dr. David C., transferred from hospital, Legion, Texas, as M. O. C. to central office, as chief hospital section, tuberculosis division, medical service.
Gehringer, Dr. George M., resigned at hospital, Fort Bayard, N. M.
Hill, Dr. Garland W., appointed as specialist in internal medicine at hospital, Tacoma, Wash.
Ibrahim, Dr. Abdu M., reinstated at hospital, Bronx, N. Y.
McCully, Dr. Rob Roy, resigned at hospital, Tupper Lake, N. Y.
McPeek, Dr. Charles E., transferred from hospital at Bronx, N. Y., to hospital at Memphis, Tenn.
Mountford, Dr. Arthur H., transferred from hospital at Memphis, Tenn., to hospital at North Little Rock, Ark.
Noble, Dr. Joseph G., transferred from hospital at San Fernando, Calif., to hospital at Minneapolis.
Resnick, Dr. Benjamin L., resigned at Hospital, Minneapolis.
Rogers, Dr. Arthur E., resigned as roentgenologist at hospital, Fort Lyon, Colo.
Sargentich, Dr. Spiro, transferred from hospital, Seattle, to hospital, American Lake, Wash.
Stephenson, Dr. John T., resigned at hospital, Augusta, Ga.
Sturkey, Dr. Edgar L., transferred from hospital at Alexandria, La., to hospital at Perry Point, Md.
Wescott, Dr. Orville D., transferred from central office to hospital at Legion, Texas, as M. O. C.

Regional Offices

Carey, Dr. Leland O., resigned as medical examiner at regional office, Des Moines.
Charlesworth, Dr. Irving E., transferred from regional office, San Francisco, to regional office, Portland, Ore.
Frescoln, Dr. Leonard D., resigned as examiner at regional office, Philadelphia.
O'Leary, Dr. Austin J., resigned as medical examiner, regional office, Helena, Mont.
Ross, Dr. Melville, resigned as medical examiner at Indianapolis.
Standifer, Dr. Charles H., resigned as neuropsychiatric examiner at regional office, Dallas, Texas.
Van Patten, Dr. C. L., resigned at regional office, Denver.
Webster, Dr. George O., resigned as dental examiner, regional office, Hartford, Conn.

Prize Awarded Army Medical Department

The first prize—a gold medal—of the International Committee of the Red Cross, in the competition of "Wound Cards" held at Geneva in connection with the meeting of the International Standardization Committee, has been awarded to the U. S. Army Medical Department. Many nations submitted exhibits. The "wound cards" are the official emergency medical record employed in the field in tagging the sick and wounded for evacuation. "Wound cards" are eventually filed in the archives in Washington, where they are valuable in the adjustment of claims for pension and wound chevrons. They remain with the patient from the time he first receives treatment in the field, and are a consecutive record of his progress. An exhibit of these forms was forwarded last spring to Geneva, at the invitation of the International Red Cross Committee.

Public Health Service Awarded Medals

The Sesquicentennial Exposition in Philadelphia awarded four gold medals to the U. S. Public Health Service for features of its exhibit at the exposition. The awards were made for (1) an exhibition of machines using chlorine gas in connection with drinking water; (2) for lifelike vaccination models showing the types of reaction to smallpox vaccination; (3) for the selection of subjects and neatness of display in a collective health exhibit, and (4) for an exhibit of a modern unit for dental surgery. The material that was on display at the exposition is being arranged for display in one of the service buildings in Washington, D. C.

CORRECTION.

Berlin Letter.—In the letter from Berlin in THE JOURNAL, Jan. 8, 1927, p 116, the statement was made that there had been 458 deaths in Germany in 1924 from epidemic torticollis. The statement should have been from "epidemic cerebrospinal meningitis."

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 24, 1926.

Insanity and Crime

At the annual dinner of the Medico-Legal Society, Mr. Justice Greer said that physicians and lawyers were interested in two important medicolegal subjects—the effects of nervous shock and what was insanity. It was extremely difficult to decide questions of the effect of nervous shock, and for his own part he was always inclined to give the sufferer the benefit. On the other subject, that of mental disease, he thought there was not much difference between the medical and legal views as at first sight there would appear, as the problem the two professions had to investigate was the same—to ascertain not whether the accused was subject to mental disease, but whether the mental disease was of such a character that the accused was not accountable for his actions, or to apply the McNaughton test, whether his mind was in such a condition that it was not influenced by the motive of fear of punishment. He found that juries were rather inclined to take the medical view, assisted by what was known as "the unwritten law," and to find mental insanity where it ought not to be. He did not think any case had been made out for loosening the law as it had been laid down.

Lord Justice Atkin referred to the opinion expressed by the members of the committee over which he presided, reported in a previous letter, that, if a person, because of insanity, was totally incapable of restraining his actions owing to an irresponsible impulse produced by the disease, he ought to be held criminally irresponsible. A high judicial authority had pronounced that idea as fantastic. So far from being fantastic, that opinion was unanswerable. The doctrine was recommended by the British Medical Association and by the Medico-Psychological Association, which wanted much more than that, but, at any rate, accepted that point of view. As far as lawyers were concerned, it was accepted by those composing the committee, of whom four were eminent authorities.

The Wellcome Bureau of Scientific Research and Museum of Medical Science

The reconstructed and enlarged buildings of the Wellcome Bureau of Scientific Research and Museum of Medical Science were formally reopened by Mr. Chamberlain, minister of health, who referred to the great advance in medical science during recent years and paid a tribute to the work of Mr. Henry S. Wellcome, the manufacturing pharmacist, who founded the bureau. The laboratory facilities have been greatly increased and additional halls have been provided for the many new exhibits of the museum collections. They will be open, free of charge, to the medical profession for consultation, study and research. It is the desire of Mr. Wellcome that the institute shall become a center of learning where all interested in the science of medicine can obtain assistance in their studies and investigations. To the bureau, which was founded in 1913, there are affiliated the various museums and research institutions founded by Mr. Wellcome from 1894 on. There are twelve well equipped research laboratories at the bureau, where investigations are carried out in all branches of pathology and parasitology, but especially with reference to tropical medicine and hygiene. The entrance hall to the museum contains three tableaus illustrating medical progress—an African medicine man at work, a medieval alchemist in his cell, and a modern laboratory bench. The collection of exhibits, unparalleled in any medical school in this country and probably in the world, was thrown open free of charge to professors, practitioners and students of medicine. Sir Walter Fletcher, secretary of the medical research council, in an address on "Research and Citizenship" referred to the various methods by which business firms established and used their research departments. One method was that of supporting scientific work and leaving the workers as free to follow their own line and to publish their results as men in any university laboratory. The progress of science had gained greatly from research work supported in this way. The Wellcome Bureau and the laboratories associated with it were supported under the system. The investigators worked within a definite field, that of the sciences serving medicine; but they were free to choose their own lines of inquiry and were as free to publish their scientific results as their colleagues working within privately endowed or state supported institutions of research.

School Health

The annual report of Sir George Newman, chief medical officer of the board of education, shows that more than half of the children attending elementary schools were inspected by the school physicians during 1925, an increase of 200,000 over the previous year, while medical reexaminations took place in nearly 1,600,000 cases. As many as 428,449 children, apart from uncleanliness and dental defects, required treatment, or 23.8 per cent of those inspected. The percentage of children requiring treatment is noticeably lower in London than, on the average, in the rest of England and Wales. This seemed to show that good results had been achieved in London. Many of the London results are achieved by voluntary bodies, by 930 school care committees, comprising in all 5,700 voluntary workers. The value of voluntary work is great, and among the voluntary workers the most important are perhaps the teachers. The head teacher appears to wield, especially in small towns and villages, enormous influence. One of the most important facts about London is that the percentage of entrants to the schools requiring treatment is 16.7, while on the average for the rest of England and Wales it is 23.1. The preschool child is apparently healthier in the London area despite the obvious disadvantages from which a young child suffers in a vast urban area. Sir George Newman places the serious degree of physical defect in the children on their first admission to school "in the forefront of the medical problems of the elementary school." The school medical service fully realizes the importance of the preschool years. The great work before the service is "the detection and control of causes" of such physical defects. The chief causes of these deficiencies are faulty nutrition, with many evil after-effects, ailments springing from infective processes, uncleanliness and skin diseases associated with unhealthy domestic surroundings, and nervous conditions due to the stresses and strains of life.

Medical Work of the Church Missionary Society

The general committee of the Church Missionary Society has published a review of the medical work carried on by the society. The statistics show that in the forty-two hospitals in the society's missions there are 5,000 beds, in which 47,000 inpatients were treated last year. During the same period, outpatients' visits numbered about 1,000,000. The new treatment of leprosy is leading to satisfactory results. Work among lepers is carried on at seven hospitals. It is found that in the large majority of cases which are treated in the early stages, a complete cure can be effected, while the suffering in more advanced cases is greatly relieved, and the severe operations that were frequently needed in earlier days are seldom if ever performed. Progress has been made in the training of native maternity nurses and the opening of welfare

centers, especially in Africa. In Uganda, where forty-nine African nurses are in charge of twenty-two centers, the decrease of population through abnormal infant mortality has ceased, and the health of the community is showing marked improvement.

"Cancer Houses," "Cancer Streets" and "Cancer Villages"

In a recent report (*J. Trop. Med. & Hyg.*, Aug. 16, 1926) on investigations in northern Italy, carried out by Dr. L. W. Sambon under the auspices of the Tropical Disease Prevention Association, remarkable evidence is given of the existence of a peculiar distribution of certain forms of cancer. The spot maps appear to justify the use not only of the well known term "cancer houses" but even of phrases of wider significance, such as "cancer streets" and "cancer villages." The facts suggest the unequal distribution of some element in the environment (whether organism or a factor of a totally different nature) that may be a predisposing or even a causative agent. This report has given rise in the press to much criticism—adverse as well as favorable. In a joint letter to the *Daily Telegraph*, many leaders of the medical profession interested in the study of cancer, scientists, veterinarians and others, have supported Dr. Sambon by asking the public to subscribe to a fund to enable further inquiry to be made. They state that although Dr. Sambon does not claim to have discovered the element mentioned above, it is possible that further investigation on similar lines may lead to its discovery. The finding of such an element would open up an entirely new line of attack on the cancer problem. The idea that environment may play a part in the causation of some forms of cancer is, of course, not new. Not only is there a strong popular belief in the existence of "cancer houses," but references to them abound in the medical literature of almost every civilized country. Prof. Karl Pearson, writing in 1912 (*Biometrika* **8**:430-435) on certain statistical data collected by Dr. Law Webb as to the occurrence of such houses in England, said that these data "provide sufficient evidence to justify a demand for a thorough investigation of the subject." "What is needed," he remarks, "is a record of the houses in which cancer has occurred, say, for the last fifty or sixty years in (1) a practically fully developed urban district, (2) a completely agricultural district, and (3) an industrial area, such as occurs frequently in Lancashire or Yorkshire, with relatively small factories, mines or works spread out over a rural district. The Tropical Disease Prevention Association is anxious to enable Dr. Sambon and his fellow workers to continue in England and elsewhere the work begun in Italy, but this has not yet been possible owing to lack of funds. A thorough survey of different types of locality, with reference to (*a*) the occurrence of any peculiarities in the distribution of cases similar to those found in Italy, and (*b*) any possible factors in the environment which might be connected with the distribution, seems highly desirable and might have far reaching results. Dr. Sambon has already shown evidence of great ability in applying his powers of observation to the elucidation of several important diseases, and has demonstrated the value of epidemiologic observation in assisting to discover their causes and possible means of control.

A Taller Generation

Seventy school medical officers, all with special sets of measuring apparatus, are now engaged on the task of recording the height, weight, chest measurement, color of eyes and hair, and the head formation of something like 55,000 school children. The task, undertaken by the anthropometric committee appointed jointly by the ministry of health and the board of education, has been going on for more than a year, and is expected to be completed by Christmas. Some time next year, when the figures have been tabulated, the committee will issue an interim report. But in the meantime there is evidence that there has been a substantial increase in the height and weight of the English school child in the last thirty or forty years. Since the British Association undertook a similar inquiry in 18[illegible] there has been nothing comparable in extent with the present investigation; but periodic records have been kept over a number of years in certain large areas, and from these it is gathered that the 5 year old English schoolboy and schoolgirl are nearly 2 inches taller than their predecessors of forty years ago, and that the boy at least is correspondingly heavier. The 5 year old boy has gained more than a pound in weight, but the girl appears to have added only about 5 ounces.

A Scientific Expedition to Investigate the Australian Aborigines

A scientific expedition will proceed to central Australia shortly to gather information with regard to the aborigines, who are dying out or entirely changing so fast through European influence that only a few years remain in which investigation may be expected to be fruitful. The expedition, which the Rockefeller Foundation is subsidizing, includes Dr. Cleland, professor of pathology in Adelaide University; Dr. Campbell, a dental expert; Dr. Harold Davies, director of the Adelaide Conservatorium of Music, and also a medical officer and a cinematographer. The inquiry will be anthropologic and physiologic. Dr. Davies will take records of coroborees and ceremonial songs, speeches, and cries, and the cinematographer will secure pictures of tribal customs and life in the native habitat. This is one of the most complete scientific expeditions that have been sent out in recent years, and the grant of the Rockefeller Foundation is the first of a series it is making annually for such work throughout Australia.

PARIS

(From Our Regular Correspondent)

Dec. 22, 1926.

Photosensitization

Photosensitization was a subject on the program of the Société de pathologie comparée, at its recent annual session. Professor Jausion treated photosensitization with reference to man, M. Richert with regard to animals, and M. Dufrénoy in connection with plants. Dr. Guillaume considered, in a comprehensive paper, the physical bases of the phenomenon. Professor Jausion's conclusions give a summary of the present state of our knowledge with reference to photosensitization in man. As he views it, photosensitization is a phenomenon common to all beings and substances. It is evident in many minerals and it is a question whether the photosensitization of living organisms is not simply the photosensitization of the mineral elements that they contain. We may assume that there is a fluorescent substance the variable amount or activity of which (and likewise the variable amount or activity of the solar or therapeutic radiations emitted from the exterior) would explain the variations in the sensitization of the organism. Deficiency diseases, such as rickets, are doubtless ascribable to these variations. The part played by vitamins is undeniable. But the effect of radiations is none the less so. A great interest attaches to the study of the relations that may exist between the vitamins and the hypothetic fluorescent substance. In the morbid states resulting from sensitization to light, a distinction must be made between endogenous and exogenous photocatalyzers. The former may appear spontaneously or may be liberated by the intervention of another substance from without the organism. The type of accidents caused by photosensitization is represented by certain cutaneous disturbances such as hydroa vacciniforme, actinic pigmentations, and the general effects of burns by light-rays or chemical rays. Resorcin is a valuable remedy with which to effect desensitization. Actinotherapy also is a new field full

of promise. Likewise, medicinal substances that have been previously subjected to light-rays or to ultraviolet rays have given important results in deficiency diseases—cod liver oil, for example.

Colonial Physicians

M. Albert Sarraut, minister of the interior, presided recently at a banquet of the Union médicale France-Amérique latine. For a number of years Sarraut was governor general of French Indo-China, where he aided in the intellectual and social uplift of the colony, so that natives were gradually fitted for administrative positions in collaboration with Europeans. He founded at Hanoi a medical school and a training school for nurses for the benefit of the Anamese. He stated that physicians exercise a preponderant influence in the inculcation of European culture in the minds of the natives. The physician is welcomed as a benefactor, combating, as he does, epidemic diseases, and also seeking to reduce their infant mortality. The colonial physician, venturing into the "bush," full of dangers from micro-organisms, human beings and animals, carries with him the blessings of vaccination and of remedies with which to combat malaria, yellow fever, typhoid and trypanosomiasis. Many have died, comparatively unknown, in this mission. Sarraut emphasized that the nation that undertakes such a cultural mission is not working solely for itself; for, after a period of heavy expense associated with great risks, there follows a second period of commercial advantage, of benefit mainly to groups of merchants, and then comes a third period with few returns. In lowering the child mortality of the conquered race, a greater number of workers become available. When the child mortality has been reduced, the native race will multiply rapidly and because of their fecundity will overwhelm the less fertile Europeans. With a forward look to that inevitable outcome, we must now prepare the natives to perform administrative work and to make of them sincere collaborators. It would be useless to try to rule forever an enslaved people, for the prolific races are destined to submerge the less fruitful, through the operation of an inexorable biologic law. France needs a large number of colonial physicians. Although the address was received with great interest, the comments in the press did not assume a hopeful tone. The number of colonial physicians is decreasing in spite of the fact that good schools of colonial medicine are being opened. The life of the colonial physician is hard and dangerous, while the compensation is inadequate. A large proportion of colonial physicians die young, leaving widows with slender pensions. If colonial physicians were adequately paid and if large firms in the colonies, which are primarily benefited by their efforts, would assist in paying the salaries of colonial physicians, it would be much easier to induce young men to take up the work. The positions that a physician may secure in the metropolis are less irksome and are more likely to lead to more advantageous posts. In these times, with the increasing cost of living, it is not possible to tempt young men with fair words.

Medical Fees

A financial crisis affects the civilian physicians of France. The burden of taxation rests most heavily on the medical profession, because it is not so easy for physicians as it is for merchants to pass on the burden by increasing their charges. The state, which, on the one hand, exacts its endless taxes, creates, on the other hand, increasing competition by founding institutions that give free or low-priced medical care to an ever larger proportion of the population. A meeting of the medical associations of the department of the Seine has just been held in Paris to consider the question of a general advance in the fee schedule of physicians. The rights of workmen, employees, functionaries and merchants to increase their rates and charges is admitted officially. Legitimate reasons for denying physicians the same rights do not exist. In order to take account of the increased cost of living, the prewar prices must be multiplied by six, whereas medical fees have been increased only twofold, or, at the most, threefold. The associations thus assembled proposed unanimously that a very modest increase in medical fees be adopted: 15 francs for office consultations and 20 francs for house visits, which would bring the first up to 25 francs ($1) and the latter up to 30 francs ($1.20). Furthermore, the schedule agreed on, a number of years ago, by the medical "syndicates," acting in accord with the minister of labor, to apply to industrial accidents, must be increased in the same proportion, the present situation inuring to the profit of wealthy insurance companies.

GENEVA

(From Our Regular Correspondent)

Dec. 2, 1926.

Geographic and Ethnic Distribution of Cancer

Prof. Eugene Pittard of the University of Geneva recently delivered a public lecture on cancer and its geographic and ethnic distribution. Pittard is an anthropologist and treated his subject entirely from this standpoint. New researches were stressed. Each race has its pathologic just as it has its physical characteristics. Of the three principal races of Europe, the Nordic race gives the highest percentage of cancer, the Celtic race offers a medium figure, while the Iberoinsular peoples are the least subject to this disease. This is not a geographic phenomenon, because these races when transported to America retain the same characteristics. In Belgium, the Flemings are more subject to cancer than the Walloons, the Nordic islands more than the Mediterranean islands. More than 700,000 persons die annually from malignant growths; in France alone, about 31,000 die from cancer. Among the Normans and Picards, 30.6 per cent of their population die from the disease, in the Celtic regions, about 16 per cent and in the Mediterranean regions, 13 per cent. One must be careful not to confound political divisions with ethnographic divisions.

Commission on Goiter and on Deafmutism

The Swiss commission appointed to study the problems of goiter and the deaf and dumb held only one meeting last year, but it has continued its researches on goiter among recruits, on the consequences of the absorption of iodine in predisposed subjects and on the influence of iodine on the milk secretion of cows. The federal council had been requested to investigate deafmutism with a view to discovering causes and preventive measures. The council decided to confine its studies in this respect to some limited part of Switzerland. Thereupon, learning that an investigation of the kind already had been proposed in the canton of Zurich, the federal council placed its funds to the credit of this canton, as the organizers of this investigation had in view the same ideas as the council.

War Time Mortality in Swiss Army

Dr. F. Kaufmann of the Swiss army medical corps has published an analysis of the mortality in the Swiss army during its mobilization in the late war. The number of deaths between Aug. 1, 1914, and Dec. 31, 1918, was 2,928. Up to the time of the first fatal case of influenza reported, June 30, 1918, there were 1,073 deaths, fifty-seven being among the recruits. The greatest number of deaths occurred in subjects between the ages of 21 and 25 (445). Chronic diseases were the cause of more deaths as the length of military service increased. Among the acute processes, the most frequent were typhoid (forty-two), cerebrospinal meningitis (twenty-seven), septicemias (thirty) and, above all, acute pulmonary

processes (121). Tuberculosis killed 292 men; 202 of these deaths were the result of pulmonary tuberculosis. Of diseases of the circulatory apparatus, endocarditis was the most prevalent; of the diseases of the digestive system, acute appendicitis was the most common and resulted in fifty-three deaths. Six cases of acute nephritis and twenty-six of chronic nephritis are recorded. The neoplasms included nine cases of carcinoma, eight cases of sarcoma and nine cases of cerebral tumors. After June 30, 1918, until December of that year, the mortality greatly increased on account of an influenza epidemic which resulted in the deaths of 1,777 men. This high percentage of deaths in the army is explained by the fact that this epidemic showed a predilection for males, especially young men. If all these factors are taken into account, the mortality in the Swiss army during its mobilization differed very little from that of the Swiss population during the same time.

Arsenic in Fruits

The following regulations have just been issued by the Swiss government for the use of arsenical preparations used for the destruction of parasites of fruit-trees and grapevines: 1. Among the preparations whose use is authorized many contain arsenic frequently in combination with lead. Both these substances are fatal poisons for man and animal, so that great prudence must be exercised in their use. 2. It is not permitted in any instance or under any pretext that those plants or any part of a plant which is destined for direct consumption shall be treated with any of these preparations. Scrupulous attention is to be given to the law relating to the use of toxic products in respect to the times (of the year) during which they may be employed. 3. Products containing arsenic or lead are also violent poisons for birds and bees. It must not be forgotten that birds contribute to the destruction of parasites in a proportion quite equal to that of all the chemical preparations utilized for this purpose. Consequently, all precautions must be taken to prevent their being poisoned. The use of these poisons should be especially avoided in the proximity of nests. The remainder of the regulations pertain to the hygiene of the persons employed on farms and those using these toxic products, etc., while the last article states that these toxic products can be kept and sold only by persons especially appointed by the local authorities.

NETHERLANDS

(From Our Regular Correspondent)

Nov. 7, 1926.

Persons of Various Nationalities Who Were Listed as "Unaccounted for" During the War

The bureau of information of the Red Cross Society of the Netherlands has just concluded its efforts to account for foreigners, both civil and military, who disappeared during the war. The number of foreigners records of whose deaths were secured amounts to 6,950. In addition, there were 266 persons, most of whom were drowned, whose identity could not be established. The bureau sent lists of the identified dead to the various governments. To the governments that expressed an interest in receiving it, the bureau sent also as complete a list as possible of the unidentified dead. The first list aided in determining the fate of many persons who had been put down as "unaccounted for."

Deafmutes in the Dutch East Indies

The otorhinolaryngologic society has been considering the project of establishing in the Dutch East Indies a school for deafmutes. However, since only seventy deafmutes were reported in the whole archipelago, it has been deemed preferable to grant scholarships to those who may wish to study in the mother country.

A Health Exposition in the Dutch East Indies

Under the honorary chairmanship of the governor of Sumatra East Coast, a health exposition will be held for the first time in the summer of 1927, at Medan. The exposition will depict an outline of the historic development of public health: applied hygiene, habitations, alimentation, hotels, plumbing, animal husbandry and agriculture, industrial problems, plantation problems, and instruction of the masses in public health requirements.

Bill Pertaining to Tuberculosis

The league for combating tuberculosis has addressed an appeal to the minister of labor in which it emphasizes the necessity of providing adequate care for tuberculous persons, of which there are 70,000 at present in the Netherlands. A large number of these receive proper medical care under the invalidity law, but there are many persons who do not consult a physician until a disease is far advanced and incurable. Medical insurance should be established that would guarantee to all patients the necessary medical care. Such insurance would make more effective the antituberculosis crusade.

Statistics of Amsterdam

The population of the city of Amsterdam is 720,000. The mortality in 1925 was 8.8 per thousand inhabitants. The infant mortality was 35.60 per thousand living births. Of the 880 deaths per hundred thousand, 71.4 were due to tuberculosis, 132 to cancer, and 253 to infectious diseases. In 1925, 1,100 cases of diphtheria and 180 cases of typhoid were observed in the hospitals. In 1925 there were 5,175 traffic accidents, 360 of which were serious and fifty fatal. The most frequent form of accident was to bicyclists (33 per cent). In 57 per cent of the cases the driver of the vehicle was held to be responsible for the accident.

Home for Retired Nurses

A home for retired nurses was recently opened at Hilversum. Dr. Hammes was the center of the movement.

A New Public Health Journal

A new public health journal, the *Nederlandsch Tydschrift voor Hygiene, Microbiologie en Serologie*, has made its appearance. It takes the place of the *Tijdschrift voor Vergelykende Pathologie*, the chief editor of which, Dr. De Jong, recently died. Thus far, hygienic and microbiologic sciences have been developed only in relation to the medical sciences. The new review, however, will deal with hygiene and bacteriology not only from the medical point of view but also from the industrial and the social standpoint. It will consider problems of alimentation, together with administrative and legal questions. Problems pertaining to the purification of waste waters will receive especial consideration.

Postvaccinal Encephalitis

The publication of the reports of several cases in which encephalitis is alleged to have been the result of smallpox vaccination has aroused considerable interest. The statistics of 1924 and 1925 make reference to thirty-five cases, fifteen of which resulted fatally. It should be emphasized that these thirty-five cases developed out of a total of more than 250,000 vaccinations, which makes the percentage of cases very small indeed. Nevertheless, the observations prove that vaccination is not absolutely without danger and furnish arguments to those who oppose making it obligatory. Dr. Terburgh, the general inspector of public health, has addressed a circular to the medical profession requesting that information be sent to him in regard to any untoward consequences of smallpox vaccination be they never so slight, in order that statistics may be secured that will be valuable in connection with this question, which is of great importance for social medicine.

BERLIN

(From Our Regular Correspondent)

Dec. 25, 1926.

Modification of Punishment for Abortion

The constant increase of criminal abortion and consequent childbed fever have attracted attention in Germany and in other countries. Increase of abortion has been observed in Germany since 1890. Whereas, between 1880 and 1890, there were only nine or ten miscarriages to 100 pregnancies, at present there are from fifteen to twenty—in some regions almost forty. According to Freudenberg, during 1909-1921, from 10 to 40 per cent of the pregnancies in Berlin were terminated by abortion, while similar statistics are reported from other cities. Professor Bumm reported that, according to statistics collected by the University Woman's Clinic, between 1860 and 1880, 10.6 per cent of the pregnancies were terminated by abortion; from 1890 to 1900, 19 per cent, and during the first decade of this century, 24 per cent. Of 100 women who, in 1916, within four weeks, presented themselves at the policlinic on account of incomplete abortion, eighty-nine had used artificial means. According to Max Hirsch, 78 per cent of abortions are artificially induced; in the 31-36 age group the percentage runs as high as 98. Owing to the damage that arises from criminal abortion, a considerable group from the social democratic party is seeking a modification of the sections of the German penal code pertaining to criminal abortion. In the present code, sections 218-220 read as follows:

(218) A pregnant woman who shall purposely cause herself to abort or who shall kill her child in utero shall be subject to a penitentiary sentence up to five years. If there are mitigating circumstances, a jail sentence for a term not less than six months shall be substituted. The same punishment shall be imposed on any person who, with the consent of the pregnant woman, applied or administered the means to induce the abortion or to cause the death of the child.

(219) Any person who, with a view of reward, shall procure, apply or administer the means whereby a pregnant woman shall cause herself to abort or shall kill her child in utero shall be subject to a penitentiary sentence up to ten years.

(220) Any person who purposely causes a pregnant woman, without her knowledge or desire, to abort, or who shall kill the child in utero, shall be subject to a penitentiary sentence for a term not less than two years. If the act shall cause the death of the pregnant woman, a penitentiary sentence for a term not less than ten years or for life shall be imposed.

Members of the radical "independent social democratic party" went so far as to propose that the aforementioned sections of the penal code be annulled. A more moderate proposal from the social democrats, which was endorsed by a former minister of justice, Professor Radbruch, who holds a chair of law in Kiel, reads as follows:

The acts designated in sections 218 and 219 are not punishable if performed by the pregnant woman or by a physician holding a government license, within the first three months of pregnancy.

The following arguments were presented in support of the proposed modifications:

1. The interdict against the induction of abortion constitutes an unendurable interference with the personal rights of a woman, who should be allowed to be the sole judge of her conduct with respect to her own body.

2. It is not commensurate with the demands of a higher morality to make the birth of a human being obligatory when distress, misery and physical or mental degeneration are certain to be his lot.

3. The law protects, under certain circumstances, against the effects of other crimes; for example, an embryo conceived in incest, against the will of the impregnated woman.

4. The punishment as a means of preventing abortion has been shown to be noneffective, for the number of abortions is increasing at an alarming rate.

5. As a consequence of the punishment imposed, abortions are performed in an unprofessional manner, which causes great harm to health and great loss of life, which can be prevented by abolition of the interdict against the act.

The social democratic representatives are right in their contentions that working women of restricted means are more seriously affected by an excessive number of pregnancies, and by the consequences of unprofessionally induced abortion, than the women of the well-to-do classes. In addition, the conception that every person should have the right to decide matters affecting his own body has an influence with the adherents to the social democratic views of life. In this matter, the radical social democrats point to the decisions of the soviet government of Russia, where the commissions on public health and justice issued, in 1920, the following:

1. Operative interruptions of pregnancy without charge are permitted in the hospitals of the soviet government.

2. The performance of such an operation by any one other than a physician is most strictly prohibited.

3. The midwife or nurse who shall perform such an operation shall be deprived of the right to practice her calling and shall be turned over to the courts for trial.

4. The physician who performs such an operation in his private practice for motives of gain shall be handed over to the trial court.

To be sure, the foregoing decree had to be supplemented in 1924 by another; for there were not enough beds in the hospitals to accommodate all the women who applied for an operation to interrupt pregnancy. On account of the excessive demands, it was therefore decided that requests for abortion operations should be accepted in a certain order, the five following classes being given consideration in the order named: (1) single women, out of work, who are supported by the labor exchange; (2) single women, employed, who already have one child; (3) women employed in the industries, who have several children; (4) wives of workingmen with several children, and (5) all the remaining members of the health insurance societies. Next come the women who are not members of any health insurance society. Consent was accorded, too, to perform the operation in a private clinic holding a special permit. The further limitations that the decree of 1920 has undergone are passed over.

On the basis of these regulations, during the period 1922-1924, more than 55,000 legal abortions were performed in the Russian district hospitals. In spite of that, from 1,600 districts (for the most part, rural) 67,000 illegal operations, performed by quacks, were reported. Nevertheless, the Russian authorities are confident that, in the rural districts as well, illegal abortion can be checked by the further increase of adequate sanitary arrangements. For our "independent social democrats," who are greatly influenced by events in Russia, the observations just described constituted sufficient basis for their proposal in the German reichstag. The medical profession expressed itself as opposed to the far-reaching mitigation (or even abolition) of the penalties for abortion. At the so-called Aerztetag, last year, Dr. Vollmann of Berlin, gynecologist and editor of the official organ of the Deutscher Aerztevereinsbund, presented a paper in which he warned against any such radical changes in the penal code. The opinions of jurists are in harmony with the views of physicians. The members of the Center (the Roman Catholic party) are compelled by the requirements of their religion to oppose any mitigation of the penalties for abortion. In the reichstag, the majority favored a modification of the penal code on the side of leniency, and the following paragraph was inserted as a substitute for sections 218-220:

A woman who kills her child in utero through abortion or otherwise, or connives with another to accomplish its death, shall be given a jail sentence. Any one who kills a child in utero through abortion or otherwise shall be subject to the same penalty. Any *attempt* to effect the death of a child in utero is likewise a penal offense. Any person who commits the deed described in the second sentence above, without the consent of the pregnant woman or from motives of gain, shall receive a penitentiary sentence. Also any person who, from motives of gain, shall supply a pregnant woman with the means or instrument to effect abortion shall be subject to a penalty; if there are mitigating circumstances, a jail sentence for a term not less than three months shall be imposed.

The former penitentiary sentence has, in most instances, been changed to a jail sentence. Furthermore, in the main, the length of imprisonment is left to the discretion of the

court. However, it is not clearly stated, as it is in the aforementioned proposal of Professor Radbruch and also in the Russian law pertaining to the subject, that a physician who performs an abortion shall be exempt from punishment. In fact, according to the wording of our penal code, physicians who perform an abortive operation without the express consent of the patient are subject to punishment for assault and battery. Therefore, in the draft of a new penal code the provisions as applicable to physicians are expressed more clearly. However usage has brought it about that, also in Germany, physicians who, for medical reasons, perform abortion are exempted from punishment. Of course, abortion performed merely for gain is prohibited even though carried out by a physician. There have been extensive debates on the question as to whether abortion may be performed by a physician for social or eugenic reasons. The balance of opinion appears to be on the negative side.

BELGIUM

(From Our Regular Correspondent)

Nov. 6, 1926.

Colibacilluria

At the annual session of the Société belge d'urologie, Drs. De Grave and Philippart presented a communication on colibacilluria. The terms "colibacilluria" and "urinary colibacillosis" should be applied only to the frank and permanent presence of considerable numbers of nonpyogenic colon bacilli in the urine of a living person. Colibacilluria may be due to an extra-urinary focus, often located in the prostate or the intestine, in which case it may be called a sustained colibacilluria. Colibacilluria may, on the other hand, be independent of any extra-urinary focus and may then be termed an "autonomous colibacilluria." The persistent character of autonomous colibacilli is due to an anatomic or physiologic impairment of the regular function of the excretory organs. Only an etiologic diagnosis and localization of the disorder will permit a rational form of treatment. Chemical and biologic treatment may supplement each other, but at present chemotherapy is more successful.

Cancer in Relation to Industrial Accidents

In a recent letter, reference was made to a communication presented by Brohée to the Société de médecine et de chirurgie des accidents de travail in regard to the relation of a neoplasm following industrial accident. Trauma is not the sole cause of cancer. However, careful observation of a series of cancers furnish plausible arguments to the effect that trauma may be the preponderant influence. The Belgian law does not require that the trauma shall be the sole cause but only one of the principal causes; therefore, from the medicolegal point of view, a causal relation must be admitted between the industrial accident and the neoplasm.

Cancer of the Cervix of the Uterus and Pregnancy

Before the Société belge de gynécologie et d'obstétrique, M. Schockaert discussed recently the indications for operative intervention in cancer of the cervix of the uterus, associated with pregnancy. He reported a case of pregnancy two and one-half months advanced in which he performed a Wertheim operation. He emphasized that, so long as cancer is operable, account must be taken of the life of the mother; otherwise the life of the child is the main consideration. He advocates an ample surgical operation, followed by deep roentgenotherapy. He holds that applications of radium to a pregnant woman are almost certain to cause abortion. M. Henrotay of Antwerp, on the contrary, employs radium therapy and about term employs a cesarean operation followed by hysterectomy. He divides cases into two classes: those with viable and those with nonviable fetuses. That raises again the question: Under what conditions should the child be saved at the expense of the mother and when should the child be sacrificed? Radium therapy in cases that go beyond the sixth month appears to be the method of choice. The majority of the physicians who took part in the discussion do not believe that radium causes abortion.

The Oldest Physicians of Belgium

The *Bruxelles médical* has recently instituted an inquiry to determine the oldest physicians in the country. It has established that the oldest Belgian practitioners are Drs. de Keghel of Ghent and Robert de Marbehan, who began practicing in 1861.

Headache Following Lumbar Puncture

At the Congress of French-Speaking Syphilologists, held in Brussels, M. Tzanck and M. P. Chevallier reported a method which eliminates or attenuates considerably attacks of headache and pseudomeningitic symptoms following lumbar puncture. It consists in injecting air into the subarachnoid spaces. A quantity of air equal to the quantity of liquid withdrawn is slowly injected.

Periarterial Sympathectomy

Laurent and Viannay reported at the Congress of Dermatologists, held in Brussels, six observations on patients, suffering from cutaneous diseases, on whom they performed periarterial sympathectomy (for the most part perifemoral). Four of the cases had to do with leg ulcers associated with edema, irremediable under ordinary treatment, in all of which improvement or cure was effected. In one case the ulcer did not scar over, but the abundant flow of serous fluid ceased at once after the intervention. The authors had one complete failure in a case of Raynaud's disease with attacks of local asphyxia affecting the fingers and ulceration of the digital extremities. A young woman affected with tuberculids, which developed in an edematous, asphyxic and habitually cold leg, soon became rid of the conditions that favored the development of the tuberculids. The authors, in closing, recommended wide use of so harmless an intervention, for which precise operative indications may be derived. M. Lorctat-Jacob of Paris contended that the operation is not to be recommended in plantar perforating ulcer.

Chiropody as a Profession

A daily paper having suggested that a school of chiropody be established which should have the sole right to grant a diploma in chiropody, a number of physicians have expressed their opinions on the subject. Some seem to fear that such a diploma might give rise to abuses and that the holders might undertake operations or treatment for which they are not prepared. On the other hand, some contend that it is not a bad idea for persons who are handling edged instruments to know more about infection, hemorrhage, antisepsis, asepsis and things of like nature. It is certain that the legal recognition of the profession will make it possible to apply coercive measures and thus to keep it within its accustomed limits. It is alleged that it will bring order into that profession, particularly if the supervision is placed in the hands of the provincial medical commission.

The Congress of Public Health to Be Held in Ghent

The Royal Institute of Public Health in London has decided to hold its annual congress for 1927 in Ghent, the first week in June. The Belgian government and the city of Ghent have agreed to participate. The patronage of the king and queen has been solicited. The general secretary of the congress is Dr. Bessemans, professor at the University of Ghent.

Marriages

THOMAS FRANKLIN DORNBLASER, Amboy, Ill., to Mrs. Maude Rider Brown of Fort Wayne, Ind., Oct. 16, 1926.

REUBEN M. ANDERSON, Morristown, Minn., to Miss Mildred M. Peterson of St. Paul, in November, 1926.

THEODORE P. E. GROSCHUPF, Bemidji, Minn., to Miss Julie Patricia of Northfield, in November, 1926.

MARY LEOLA CARRICO, Danville, Ill., to Mr. C. J. A. Dalziel of Winnipeg, Man., Dec. 11, 1926.

SAMUEL L. KELLER, Waukegan, Ill., to Miss Edith Dahlstrom of Chicago, Dec. 22, 1926.

FLOYD R. N. CARTER to Miss Josephine Decker, both of South Bend, Ind., Nov. 3, 1926.

ROBERT W. CONNOR to Miss Edna Mae Pierce, both of Owensboro, Ky., Aug. 29, 1926.

NORMAN LIVSHIN to Miss Mildred Wilkinson, both of Syracuse, N. Y., Dec. 19, 1926.

ROBERT V. GALLAGHER to Miss Margaret Hooper, both of Battle Creek, Mich., recently.

JOHN F. GIPNER to Miss Marcella Cloutier, both of Rochester, Minn., Dec. 27, 1926.

JAMES S. WOLFSTEIN to Miss Ruth Rosenfeld, both of Cleveland, January 17.

ALFRED HOFF to Miss Marjorie Monkhouse, both of St. Paul, Dec. 1, 1926.

Deaths

George Sumner Huntington, New York; Medical Department of Columbia College, New York, 1884; assistant demonstrator of anatomy, 1886-1888, demonstrator and lecturer, 1888-1889, and since 1889 professor of anatomy at his alma mater; member of the American Association of Anatomists; formerly on the staffs of the Roosevelt and Bellevue hospitals; for many years American editor of the *Journal of Anatomy and Physiology;* aged 65; died, January 5.

John Thomas Altman, Sr. ✠ Nashville, Tenn.; Vanderbilt University School of Medicine, Nashville, 1886; professor of clinical obstetrics at his alma mater since 1900; member and at one time president of the city board of health; on the staffs of the Vanderbilt and St. Thomas hospitals; chairman of the section on obstetrics of the Southern Medical Association in 1923; aged 62; died in December, 1926, of heart disease.

Herbert Madison Rich ✠ Detroit; University of Michigan Medical School, Ann Arbor, 1901; member of the American College of Physicians and the American Climatological and Clinical Association; on the staffs of the Detroit Tuberculosis Sanatorium, the Harper and Woman's hospitals; editor of the *Detroit Medical Journal,* 1905-1909; aged 52; died, Dec. 15, 1926, of pneumonia.

James B. Noyes, New Berlin, N. Y.; Bellevue Hospital Medical College, New York, 1875; past president of the Chenango County Medical Society; member of the Medical Society of the State of New York; health officer of the town and village of New Berlin since 1898; aged 73; died, Dec. 23, 1926, of arteriosclerosis and lobar pneumonia.

John LaFayette Gordon ✠ Columbus, Ohio; Starling Medical College, Columbus, 1894; instructor of physical diagnosis at his alma mater, 1900-1903; past president of the Columbus Academy of Medicine; formerly on the staff of the Grant Hospital; aged 64; died, Dec. 23, 1926, of pneumonia.

John W. Wright, Erie, Pa.; Jefferson Medical College, Philadelphia, 1890; member of the Medical Society of the State of Pennsylvania; for more than thirty years health officer of Erie; formerly on the staff of the Hamot Hospital; aged 58; died, Dec. 14, 1926, of heart disease.

Charles LaFayette Reeder ✠ Tulsa, Okla.; Barnes Medical College, St. Louis, 1897; past president of the Oklahoma State Medical Association; one of the founders of the Tulsa Hospital; formerly mayor of Tulsa; aged 64; died, Dec. 27, 1926, at the Barnes Hospital, St. Louis, of diabetes.

Harry Stevenson Seiwell ✠ Retreat, Pa.; University of Illinois College of Medicine, Chicago, 1913; member of the American Psychiatric Association; medical superintendent of the Retreat Mental Hospital; served during the World War; aged 41; died, Dec. 30, 1926, of pneumonia.

Robert S. Trimble, Washington, D. C.; National University Medical Department, Washington, 1903; member of the Medical Society of the District of Columbia; for several years on the staff of the George Washington University Hospital; aged 61; died, January 2, of heart disease.

Anton Theodore Harris Holmboe, Chicago; University of Illinois College of Medicine, Chicago, 1886; formerly professor of orthopedic surgery, Bennett Medical College, Chicago; on the staff of the Norwegian-American Hospital; aged 69; died, January 3, of arteriosclerosis.

George E. Kimber, Rushville, Ohio; National Normal University College of Medicine, Lebanon, 1891; member of the Ohio State Medical Association; aged 59; died, Nov. 9, 1926, at the Mercy Hospital, Columbus, of chronic nephritis and cardiorenal disease.

John William Turner ✠ Louisiana, Mo.; University of Missouri School of Medicine, Columbia, 1889; secretary of the Pike County Medical Society; served during the Spanish-American and World wars; aged 49; died, Dec. 10, 1926, of heart disease.

John King Hamilton, Youngstown, Ohio; Cleveland Homeopathic Medical College, 1900; past president of the Mahoning County Medical Society; on the staff of St. Elizabeth's Hospital; aged 59; died, Nov. 1, 1926, of heart disease.

Claude Frank Shronts ✠ Momence, Ill.; Northwestern University Medical School, Chicago, 1896; formerly on the staff of the Kankakee (Ill.) State Hospital; aged 57; died, Dec. 27, 1926, at St. Mary's Hospital, Kankakee, of diphtheria.

Hiram L. Throgmorton, Pocahontas, Ark.; Marion-Sims College of Medicine, St. Louis, 1898; member of the Arkansas Medical Society; aged 56; died, Nov. 30, 1926, at St. Bernard's Hospital, Jonesboro, of cholecystitis.

Frederick W. Shaley, Terre Haute, Ind.; Rush Medical College, Chicago, 1884; member of the Indiana State Medical Association; on the staff of St. Anthony's Hospital; aged 68; died, Dec. 27, 1926, of bronchopneumonia.

Thomas A. Huggins, Sparta, Ohio; Starling Medical College, Columbus, 1889; member of the Ohio State Medical Association; formerly a druggist; aged 71; died, Nov. 18, 1926, of cerebral thrombosis.

William John Uppendahl, Decatur, Ill.; Rush Medical College, Chicago, 1901; served during the World War; aged 48; died, Dec. 29, 1926, at the Presbyterian Hospital, Chicago, of carcinoma of the stomach.

Edmund Emerson Hill, Suncook, N. H.; Medical School of Harvard University, Boston, 1893; member of the New Hampshire Medical Society; aged 58; died, Oct. 24, 1926, of cerebral hemorrhage.

Carlos C. Rozelle, Lagrange, Ind.; Jefferson Medical College of Philadelphia, 1907; member of the Indiana State Medical Association; aged 43; died, Dec. 31, 1926, of bronchopneumonia.

Michael J. Skilling, Aldan, Pa.; Jefferson Medical College of Philadelphia, 1873; aged 77; died, Dec. 22, 1926, at the Jefferson Hospital, Philadelphia, of carcinoma of the bladder.

Gurney Williams ✠ Ventnor, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1895; aged 52; died suddenly, Dec. 29, 1926, at Trenton, of cerebral hemorrhage.

John R. Wallace, Evanston, Ill.; Bennett Medical College, Chicago, 1890; member of the Illinois State Medical Society; aged 65; died, Dec. 16, 1926, of an injury received in a fall.

Clarence Humphrey Davis, Nashville, Tenn.; University of Tennessee College of Medicine, Memphis, 1912; aged 38; died, Dec. 16, 1926, at a local hospital, of bronchopneumonia.

Henry C. Baucum, Haynesville, La.; Louisville (Ky.) Medical College, 1904; member of the Louisiana State Medical Society; aged 49; died, Dec. 17, 1926, of angina pectoris.

Gustavus Adolphus Newman ✠ Stillwater, Minn.; University of Minnesota Medical School, Minneapolis, 1895; aged 64; died suddenly, Dec. 22, 1926, of pernicious anemia.

James Benjamin Dudley ✠ Muenster, Texas; Bellevue Hospital Medical College, New York, 1889; also a pharmacist; aged 62; died, Oct. 26, 1926, of acute nephritis.

John S. McCreight, Luxora, Ark. (licensed, Arkansas, 1903); aged 55; died, Dec. 26, 1926, at the Baptist Memorial Hospital, Memphis, Tenn., following an operation.

John Davidson Gladney ✠ Homer, La.; Tulane University of Louisiana School of Medicine, New Orleans, 1920; aged 34; died, Dec. 22, 1926, of chronic nephritis.

William Arms Farwell, Sherbrooke, Que., Canada; McGill University Faculty of Medicine, Montreal. 1891; on the staff of the Sherbrooke Hospital; aged 68; died, in December, 1926.

Charles Bruce Smith ✠ Millersburg, Ky.; University of Louisville School of Medicine, 1886; aged 62; died, Dec. 28, 1926, of heart disease and chronic nephritis.

Austin Irvin Brown ✠ Oklahoma City, Okla.; Marion-Sims College of Medicine, St. Louis, 1892; aged 58; died, Dec. 29, 1926, of chronic nephritis and heart disease.

John Thomas Abbott, Lansing, Mich.; Victoria University Medical Department, Toronto, Ont., Canada, 1872; aged 87; died, Dec. 20, 1926, of arteriosclerosis.

William W. Elmer, Leavenworth, Wash.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1858; aged 92; died, Dec. 7, 1926, of senility.

Edward Quinn, Lac du Flambeau, Wis.; Rush Medical College, Chicago, 1878; formerly physician in the Indian Service; aged 70; died recently in Iowa.

Clement Lanier Richardson, Jacksonville, Fla.; College of Physicians and Surgeons, Baltimore, 1880; Confederate veteran; aged 85; died, Dec. 3, 1926.

Charles H. MacVean, Brooklyn; University of Buffalo Department of Medicine, 1900; aged 55; was found dead, Dec. 19, 1926, of chronic myocarditis.

Eugene Henry Ackerman, Cottageville, S. C.; Medical College of the State of South Carolina, Charleston, 1912; aged 38; died, Dec. 23, 1926, of carcinoma.

George Gardner Clark ✠ Philadelphia; Medical Department of the University of the City of New York, 1880; aged 73; died, Dec. 11, 1926.

John French Bell ✠ Oakwood, Texas; Memphis Hospital Medical College, 1900; aged 55; was found dead, Dec. 29, 1926, of heart disease.

Eugene Howard Barbera ✠ Oakland, Calif.; Oakland College of Medicine and Surgery, 1918; aged 36; died, Dec. 27, 1926, of pneumonia.

James Kyle Warner, Livermore, Calif.; University of California Medical School, San Francisco, 1891; aged 58; died in December, 1926.

Freeman C. Mason, Hillsdale, Mich.; Rush Medical College, Chicago, 1877; aged 75; died, Dec. 12, 1926, at the Kalamazoo (Mich.) Hospital.

Archie Maurice Spurgin, Dallas, Texas; Baylor University College of Medicine, Dallas, 1902; aged 48; died, in December, 1926.

Russell Abbott Smith ✠ Uniontown, Pa.; Jefferson Medical College of Philadelphia, 1906; aged 44; died, Dec. 31, 1926, of pneumonia.

Edward Waitzfelder, New York; Medical Department of the University of the City of New York, 1873; aged 72; died, Dec. 10, 1926.

James Marion Lovett, Huntington, W. Va.; University of Maryland School of Medicine, Baltimore, 1892; aged 61; died, Dec. 25, 1926.

George James Charlesworth, Santa Monica, Calif.; Trinity Medical College, Toronto, Ont., Canada, 1883; aged 67; died, Dec. 7, 1926.

Orrin H. Rosser ✠ Renovo, Pa.; Medico-Chirurgical College of Philadelphia, 1890; aged 60; died, Dec. 31, 1926, of pneumonia.

William E. Fleming ✠ Detroit; Ohio Medical University, Columbus, 1896; aged 58; died, Nov. 9, 1926, of coronary embolism.

Rollin B. Page, Easton, Md.; Maryland Medical College, Baltimore, 1905; aged 49; died, Nov. 25, 1926, at a local hospital.

Thomas J. Sullivan, Seattle, Wash.; College of Physicians and Surgeons, Keokuk, Iowa, 1887; aged 66; died, Dec. 20, 1926.

George Gilbert Rowe, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1879; aged 71; died, Sept. 24, 1926.

Rudolph Schiffman, Los Angeles; St. Louis Medical College, 1867; aged 78; died, Dec. 23, 1926, at Pasadena, Calif.

Faris C. Richards, Jasper, Ga.; University of Georgia Medical Department, Augusta, 1887; aged 66; died, Dec. 23, 1926.

Ezra T. Hall, Beebe, Ark.; Missouri Medical College, St. Louis, 1869; aged 88; died, Dec. 7, 1926.

Christian F. Warn, Minneapolis (licensed, Minnesota, 1902); aged 65; died, Nov. 25, 1926.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

I-ON-A-CO—THE MAGIC HORSE COLLAR

The Metamorphosis of a Realtor into a Magician

[The article that follows appears in the current issue of *Hygeia* (February, 1927). It is reprinted here for the information of the hundreds of physicians who have written to THE JOURNAL for data on the subject.]

New wonders come out of the West. One expects big things from the Pacific coast—and usually gets them. The greatest piece of quackery of our generation came from San Francisco when Albert Abrams, the most finished medical charlatan of his time, capitalized the public's ignorance of, and interest in, radio to exploit his so-called electronic reactions. California should have been satisfied with this superb piece of pseudo-scientific buncombe. Apparently she is not, for today we are being treated to another piece of electrical hocus-pocus that promises to eclipse, for the proverbial nine days, the electronic reactions and make Abrams look like a piker. It must be the climate.

The new wonder is I-on-a-co, alleged to have been invented by one Gaylord Wilshire. It is exploited by the I-on-a Company of Los Angeles. Mr. Wilshire, it seems, was one of the earliest of the parlor socialists and for some years ran a monthly, *Wilshire's Magazine*, which was devoted to The Cause. In his endeavor to ameliorate the injustice of our social system, Mr. Wilshire seems to have run (unsuccessfully) for Congress in California in 1890, to have stood (unsuccessfully) for Parliament in England in 1894 and also (unsuccessfully) for the Canadian Parliament in 1902, and to have run again (unsuccessfully) for Congress in New York in 1904. Mr. Wilshire has also dabbled somewhat extensively in real estate, seemingly to his financial betterment. The I-on-a advertising lays more stress on Mr. Wilshire's record as a successful realtor than on his experience as an unsuccessful Socialist candidate in the United States, Canada and England.

The I-on-a-co advertising gushes over Mr. Wilshire. From it one learns that Gaylord Wilshire was educated at Harvard and comes of a "family of doers and go-getters." Much is made of the fact that Mr. Wilshire "reads the latest books," is "intimate with famous men" and especially is a great friend of Bernard Shaw. Imitation being the sincerest flattery, Mr. Wilshire does his hair and trims his beard in the correct Shavian manner, turns up his coat collar, pulls in his chin and poses for a photograph, so as to show the striking resemblance between himself and the author of "The Doctor's Dilemma." The advertising reproduces, side by side, this posed picture of Gaylord Wilshire with that of Shaw. From the same source, too, it is learned that both Shaw and Wilshire have had a romance with an alleged famous beauty, described in the advertising as "The Cleopatra of the English stage." Mr. Wilshire's virtues, as summarized in the advertising, are:

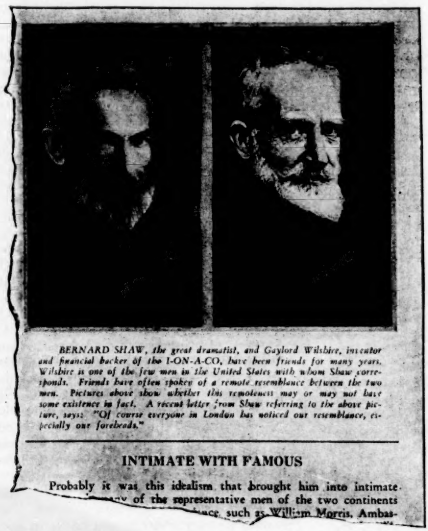
> " . . . social crusader, magazine publisher, gold miner, explorer, pioneer city builder, tropical explorer, lecturer, writer, friend and companion of great authors, artists, luminaries of the drama and stage in Europe and America, and now as inventor of a magnetic appliance that is banishing pain and suffering from thousands of his fellow men, not to mention causing a veritable revolution in the whole field of therapy."

Nowhere, however, is there any hint as to his qualifications for entering the field of therapeutics with a device that, one gathers from the advertising, will cure cancer, Bright's disease and paralysis, change gray hair back to black and give girls who use it a "permanent wave."

SIMPLICITY FOR THE SIMPLE

The beauty of the I-on-a-co lies in its simplicity. Out in the golden West, where the I-on-a Company has done its

most extensive advertising, the Public Health League of Washington, working in cooperation with the Better Business Bureau of Seattle, investigated the I-on-a-co and published a report on it. The better business bureaus, as many of our readers know, are component branches of the Associated Advertising Clubs of the World, and are vitally interested in maintaining public confidence in advertising; therefore, they are opposed to all fraudulent and misleading advertising.



BERNARD SHAW, the great dramatist, and Gaylord Wilshire, inventor and financial backer of the I-ON-A-CO, have been friends for many years. Wilshire is one of the few men in the United States with whom Shaw corresponds. Friends have often spoken of a remote resemblance between the two men. Pictures above show whether this resemblance may or may not have some existence in fact. A recent letter from Shaw referring to the above picture, says: "Of course everyone in London has noticed our resemblance, especially our foreheads."

INTIMATE WITH FAMOUS

Probably it was this idealism that brought him into intimate ... of the representative men of the two continents ...ace such as William Morris, Ambas-

Even one's friends and acquaintances may be capitalized. Here we see Mr. Wilshire assuming a Shavian pose, to the end, one assumes, that greater glory may be reflected on his magic coil of wire.—From the I-on-a-co advertising.

The Public Health League of Washington is a state organization which has among its officers the president of the state university, the editor of one of the leading newspapers of the state, club women, business men, university, normal school and high school professors and teachers, pharmacists, dentists and physicians.

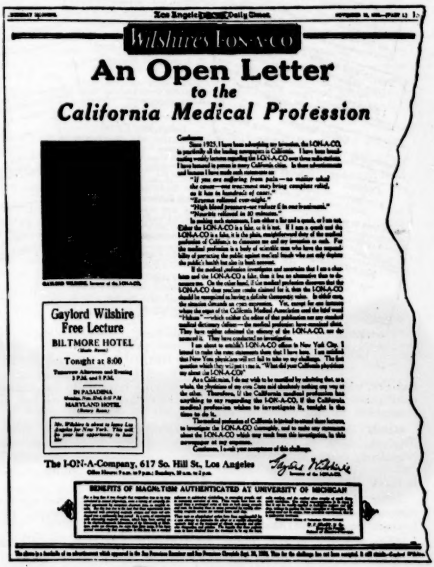
These two bodies in Seattle selected a committee to investigate the I-on-a-co. The committee comprised a technician from a large x-ray apparatus concern, a business man, the secretary of the State Pharmacy Association, the secretary of the Public Health League, two physicians, both of them specialists in physical therapy, the dean of the college of engineering of the state university, the commissioner of health of Seattle, and the construction engineer of the city light department of Seattle.

The report of this committee was, in effect, as follows: The I-on-a-co is simply a coil of insulated wire (about 6½ pounds of 22 gage, worth about $3.50) about 18 inches in diameter, with a plug that permits the coil to be attached to an electric light socket. There is a smaller coil that plays no part in the alleged curative use of the I-on-a-co but plays an all-important part in the magical features of the scheme by impressing the purchaser with the marvelous potentialities of the larger coil. The small coil is also of insulated wire (about 1 pound of 18 gage, worth about 60 cents), has its two free ends attached to a miniature light socket containing a small flashlight globe. When the larger coil is plugged into an electric light socket where there is an alternating current (the kind of current that is found in the great majority of city lighting systems), there is, of course, generated within the large coil a weak fluctuating magnetic field. This will cause the flashlight globe in the small coil to light up when the small coil is brought in close proximity to the large coil. This phenomenon, while elementary to a degree to those who know anything about electricity and magnetism, furnishes for the uninitiated that element of mystery which is so necessary to the successful exploitation of any alleged cure for human ailments.

The I-on-a-co is used by placing this magnetic horse collar over the neck, around the waist, or around the legs of the person who thinks he is going to be helped by a piece of buncombe of this sort. It sells for $58.50 cash or $65 on time. The cost of the materials for making an I-on-a-co should not exceed $5. As a cure for any physical ailment it is not worth 5 cents.

TESTIMONIALS? OF COURSE!

The I-on-a-co advertising leads the public to believe that the device will cure practically all human—and some canine—ailments, and restore gray hair to its original color. Should the public be sufficiently inquisitive to ask how a simple coil of wire can accomplish such miraculous results, an explanation is at once forthcoming and, doubtless, the explanation, like a well-known brand of cigarets, satisfies; the I-on-a-co cures by magnetizing the iron in the blood. Just that! Elemental, my dear Watson! The nontechnically trained public does not, of course, realize that one might with equal success try to magnetize the iron in a bunch of spinach.



Wilshire I-ON-A-CO

An Open Letter
to the
California Medical Profession

Gaylord Wilshire
Free Lecture
BILTMORE HOTEL
Tonight at 8:00

The I-ON-A-Company, 617 So. Hill St., Los Angeles

BENEFITS OF MAGNETISM AUTHENTICATED AT UNIVERSITY OF MICHIGAN

Full page advertisements in metropolitan newspapers come high but believers in modern magic pay for them. And certain newspapers are perfectly willing to share in the profits of quackery.

The chief advertising asset of the I-on-a-co, as in all quackery, is testimonials. Here is a summary of a few cases published in the come-on literature:

Arthritis.—D. J. Smith of 1214 West Eighth Street, Los Angeles. On crutches. Suffered from arthritis for eleven years. Used I-on-a-co. "The lime has dissolved in the joint of his hip and he has regained his health completely," and his white hair has become black!

"Heart Disease."—Jim Rowan, alleged to be well known in Los Angeles, said to have been dying of "heart disease." Given up as incurable by a prominent physician. Used I-on-a-co. Now well as ever!

Diabetes Mellitus.—Mrs. Jane Griswold, 237 West Fifty-Fifth Street, Los Angeles, suffered from diabetes for two and one-half years. Did not improve. Used I-on-a-co. Now "eats what she wants, including candy and desserts"!

Paralysis.—E. K. Cassah, a fruit packer, claimed to be paralyzed from waist down, legs being always cold. Used I-on-a-co. Circulation restored; legs no longer cold!

Cancer.—Frank Samalar, 322 South Spring Street, Los Angeles. Cured of cancer of the neck by I-on-a-co!

Bright's Disease.—Mrs. Ray Griffin, 1210½ West First Street, Los Angeles, claimed she had Bright's disease, dropsy and arthritis. Cured by I-on-a-co!

Asthma.—T. J. Pollard, 414½ North Hill Avenue, Los Angeles, claimed to have had asthma for fifteen years. Got relief after one I-on-a-co treatment!

Paralysis.—Leslie O. Conklin, 1555 West Twenty-First Street, Los Angeles, partly paralyzed in arms and legs and unable to walk for many weeks. After a twenty-minute treatment with I-on-a-co walked unassisted!

Pernicious Anemia.—Mrs. Edith H. Manor, 127 North Hope Street, Los Angeles, claims to have had pernicious anemia, as diagnosed at the General Hospital of Los Angeles. After a few weeks' use of I-on-a-co, she says her health became normal!

Canine Chorea.—William Sisk, Hollywood, claims that his dog had St. Vitus' dance and was cured by sleeping "within the influence of I-on-a-co"!

Baldness.—H. R. Kearns, Bishop, Calif., claims: "I-on-a-co has stopped my hair falling out and rethatched my bald spot and is now actually restoring the original color"!

Hair Color Restorer.—H. A. Andrews, 514 El Molino Street, Pasadena, claims to have had nothing but gray hair on his head until he used I-on-a-co, when about one third of it "miraculously returned to the original color"; and he further reports that his hair "grows twice as fast as formerly"!

Pernicious Anemia Case Restored to Health
Mrs. Edith H Manor, 127 North Hope Street, Los Angeles, Calif., December 20, 1925.
Cancer Removed
Gallstones Cured
Dropsy and Bright's Disease Cured
Varicose Veins Cured
Baldness Cured
Goiter Reduced
Indigestion Cured
The Dumb Talk
Prostate Gland Relieved
I-on-a-co Reduces Blood Pressure And Relieves Paralysis
Deaf Hear
Mental Derangement Overcome
Dog Cured of Chorea—No Faith Cure Here

Photographic reproductions (reduced) of some of the testimonials for the I-on-a-co. It will be noticed that the magic horse collar cures gallstones, pernicious anemia, cancer, Bright's disease, baldness and other conditions! It also makes the dumb talk and the deaf hear!

Mental Derangement.—Mrs. C. Edward Rosa, 2707 Morsley Road, Altadena, claims to have tried the I-on-a-co on her husband, who was "completely deranged." After four applications of I-on-a-co, the husband "became quite rational and seemed to have good control of his mental faculties"!

Goiter.—David Van Zile, 1029 East Vilia Street, Pasadena, had a toxic adenomatous goiter of the colloid type. After serious symptoms, the I-on-a-co was used and the goiter "almost disappeared"!

Varicose Veins.—W. F. Bragg, 740 Elizabeth Street, Pasadena, was troubled with varicose veins for ten years. He was cured by I-on-a-co!

Gallstones.—S. F. Van Zile, 826 North Chester Avenue, Pasadena, claimed to have a complete cure of gallstones from the use of I-on-a-co!

Prostate Trouble.—E. H. Barnes, 141 South Kenmore Avenue, Los Angeles, claims to have had "prostate gland trouble," but to have recovered after ten days' use of I-on-a-co!

In addition to the cases just quoted there are one or two others that are of interest. In several pieces of advertising that have been put out by the I-on-a-co concern, it has been declared that Dr. Annie G. Lyle, family physician to Dr. David Starr Jordan, was trying out the I-on-a-co, and Dr. Lyle was quoted as follows:

"I want to say I have fallen for the I-on-a-co strongly. It appeals to me because it brings the electro-magnetic force into the simplest, most effective and most convenient form for use in treating disease. I am big enough to use anything advertised or not that may help my patients to get well."

Dr. Lyle was written to and asked for the facts. She replied in part as follows:

"My name has been used in the advertisements entirely without my knowledge and without my consent. I do not know Mr. Wilshire. I never made any of the statements ascribed to me in the advertisements. It is evident that Mr. Wilshire's publicity man has drawn on his imagination for the facts."

Mr. Wilshire has claimed that a Los Angeles physician had alleged that his (the physician's) daughter had been relieved of exophthalmic goiter by the I-on-a-co. The doctor was written to and replied that there was not the slightest justification for the claim. The advertising has stated that Dr. Arbuthnot of Los Angeles "had a long standing case of wry neck instantly relieved" by the I-on-a-co. Dr. Arbuthnot was written to and agrees that she might just as well have used the left hind foot of a rabbit.

Another case reported in December, 1925, by Wilshire himself was described as follows:

"We had another case reported this morning of Cancer, Mrs. Virginia Clements of Riverside, who is under the care of Dr. H. A. Atwood, M.D. This woman now reports after a month's treatment that the ulcerated surface is looking very much better, the pain is gone and there is no longer an offensive odour. She has also made a great improvement in her strength and general health."

We wrote to the only H. A. Atwood, M.D., there is in Riverside, quoting the paragraph just given and asking him if there was any truth in the statement and asking, further, for the present condition of Mrs. Clements. Dr. Atwood replied that he knew nothing of the case!

Testimonials are always good business getters. As evidence, of course, they are not worth the paper on which they are printed. Their value was well expressed by one of the attorneys-general for the postmaster-general—a man who, in the course of his work, had occasion to investigate thousands of medical testimonials published by concerns that were later declared frauds by the government. The attorney-general said:

"Speaking generally it may be said that in all my experience in this office never has a medical concern, no matter how fraudulent its methods or worthless its treatment, been unable to produce an almost unlimited number of these so-called testimonial letters."

NEWSPAPER AND MAGAZINE RESPONSIBILITY

The successful commercial exploitation of devices like the I-on-a-co is possible largely because some newspapers and magazines are willing to share in the profits of quackery. One finds, for example, that the Los Angeles daily *Times* has profited to the extent of several full pages of advertising, in bringing to the attention of its readers the alleged virtues of Wilshire's "invention." Two full pages appeared in the San Francisco *Chronicle*, at least one full page in the San Francisco *Examiner*, a three-quarter-page advertisement in the *Oregonian*, published in Portland, a similar size advertisement in the Seattle *Star*. Then there was a double-page spread that adorned Mr. Hearst's *International-Cosmopolitan* for December, 1926.

On the reverse of the shield, it is worth recording that the Seattle *Record* has published a series of articles warning its readers against the I-on-a-co quackery, and giving in detail the findings of the local committee that investigated the thing.

It is impossible in the space available to go any more into detail on this latest curative wonder. One could discuss at length, of course, the claim made in one of the booklets, in which a good-looking young woman is shown taking an I-on-a-co treatment and quoted as claiming that the I-on-a-co "has not only given her hair a remarkable sheen, but also *a natural permanent wave*." One could also go into detail over the claim repeatedly made in the I-on-a Company's advertising that the "benefits of magnetism" have been authenticated at the University of Michigan. To further this claim, the I-on-a concern publishes what purports to be a statement from "W. F. Brady, M.D., Dean of the Faculty,

School of Electro-Therapy" of the University of Michigan. There is no such man, there is no "School of Electro-Therapy" at the University of Michigan, and the entire story seems to have been built up out of airy nothings.

THE WILL TO BELIEVE

Many years' experience in the investigation of pseudo-medical devices and modern charms and amulets shows how hopeless it is to enter into a detailed criticism of devices such as the I-on-a-co. It is as futile for a physician to argue the inherent worthlessness of things of this sort as it is for an astronomer to refute the charge that the moon is made of green cheese. It is possible to say that the magnetic flux which is generated whenever an electric current is passed through a simple coil of wire, such as the I-on-a-co, cannot and does not do the things the I-on-a concern claims, but the credulous will not believe it. It is probably equally useless to call attention to the fact that the magnetic flux produced by the I-on-a-co differs not at all in kind from the magnetic flux produced by the earth, a flux in which every one who lives on this terrestrial sphere moves and has his being.

The thesis on which the I-on-a-co sales talk is based misleads those whose knowledge of electricity and physiology never extended beyond the elementary treatises in use in the common schools. To say that many people will use the I-on-a-co and be benefited is trite. The same can be said for the left hind foot of a rabbit caught in the churchyard in the dark of the moon; it can be said for the horse chestnut (or "buckeye") that certain individuals carry in their pockets; it can be said for the so-called rheumatism rings worn by many who should know better. Such beliefs have not the slightest scientific importance. There is no quackery too absurd to find its defenders. The healing power of nature and the vagaries of the human mind are sufficient explanation.

The only reason that intelligent but technically ignorant people are deceived by a device such as the I-on-a-co, when they are not taken in by the rabbit's foot, is because their general knowledge makes it a little less easy for them to have the will to believe. Credulity is born of lack of knowledge, not of lack of brains.

Correspondence

THE SHEPPARD-TOWNER ACT

To the Editor:—I feel that in justice to a not inconsiderable as well as a not inconsiderate minority, perhaps, of members of the American Medical Association who believe in the benefit of the Sheppard-Towner Act, some of the statements in an editorial in the issue of Nov. 27, 1926, should not go unchallenged.

It was never represented that the reduction of infant and maternal mortality was going to be effected through "social and economic reforms." The type of work described at the hearings at the time the bill was pending in 1921—mainly, of course, the child health conference as a teaching center for mothers—is the method that is being used generally throughout the country.

The proponents also never indicated that they thought the work could be accomplished in a five-year period. It represented, however, a new experiment in federal aid, and Miss Lathrop's testimony was to the effect that five years ought to be enough to demonstrate whether the plan was a practical one and the appropriation should be continued at the end of that time.

So far as the use of maternity and infancy funds for older children is concerned, the board ruled that infancy would be defined to include the preschool period. This was done because in the rural districts and small towns no work is being done for the preschool child, and in order to get the infants in it is necessary to offer examination and supervision for both. There are no other older children that are included in the work except where Little Mothers' leagues and classes of instruction in the care of the baby have been started. All of that type of work has been greatly increased since the Sheppard-Towner Act became available.

As for the hearing before the Interstate and Foreign Commerce Committee, Miss Abbott assures me it was not a secret hearing, and the opposition was represented. I think that, owing to the fact that they did not realize that the measure would come before the Interstate and Foreign Commerce Committee instead of the Appropriations Committee, they had done considerable preliminary work with the Appropriations Committee and little with the Interstate and Foreign Commerce Committee. The authorization of an appropriation always goes to the committee concerned with the subject matter and not to the Appropriations Committee. The Interstate and Foreign Commerce Committee had the bill in 1921, and the proposal to extend the appropriation therefore went to that committee.

HENRY L. K. SHAW, M.D., Albany, N. Y.

[COMMENT.—Dr. Shaw says: *"It was never represented that the reduction of infant and maternal mortality was going to be effected through 'social and economic reforms.'"* Before the House Committee on Interstate and Foreign Commerce, in December, 1920, Miss Julia Lathrop, then chief of the Children's Bureau and probably the leading proponent of the Sheppard-Towner Act, testified as follows:

"Mr. Winslow. Is this not specifically a medical proposition?

"Miss Lathrop. I do not so regard it; and I am sure that any one who had time to read the successive reports of the bureau upon infant mortality would not feel that this bill is primarily a medical proposition. *I think it is a social and economic proposition, and we cannot ignore those basic aspects of it.*"

Mr. Winslow, then chairman of the committee named above, asked Miss Lathrop, "Is there any doubt that this particular undertaking covered by this bill is a health consideration?" Miss Lathrop replied:

"My judgment is that it is not altogether a health consideration. The inquiries that led up to it were not medical, but were chiefly in the social and economic field. *And the principles to be applied in administering this law are largely in the social and economic field, and it is not a health measure in the sense in which the prevention or cure or treatment of disease is a health measure.*"

Dr. Shaw says that "in the rural districts and small towns no work is being done for the preschool child." Granting merely for purpose of argument that information on this point is correct, the fact would hardly justify administrative officers spending for children above the age of infancy money appropriated by Congress for infants and mothers; the proper course was for such administrative officers to ask Congress to enlarge the scope of the law, not to undertake to enlarge it themselves. If such enlargement could be justified on the hypothesis that it was necessary "in order to get the infants in," then the administrative officers could justify enlargements of the act into the field of milk control, housing, sanitation generally, and other activities that would promote the "getting in" of the infants. Certainly, a statute authorizing a federal bureau to buy the supervision and control of state activities in the field of maternal and infant hygiene does not justify the bureau in buying supervision and control of state activities in other fields.

Dr. Shaw writes:

"There are no other older children that are included in the work except where Little Mothers' leagues and classes of instruction in the care of the baby have been started. All of that type of work has been greatly increased since the Sheppard-Towner Act became available."

This is merely the old argument: *post hoc, propter hoc.* Evidence has not been discovered to show that the type of work named has increased since the Sheppard-Towner Act was passed more than it would have increased if the act had not been passed; or to show that such increase, if any, as has resulted from the act has not been produced at the expense of important activities in other health fields.

Dr. Shaw writes that Miss Abbott has assured him that the hearing before the Committee on Interstate and Foreign Commerce was not a secret hearing. The editorial to which he

takes exception did not so characterize it, although it might well have done so. The hearing was held under circumstances that excluded many persons opposed to it, just as much as if the hearing had been held behind locked doors. The bill was introduced on the afternoon of January 13, and the hearing was held and closed on the following day. Obviously, adequate notice of the hearing was not possible, and it was not given. Persons outside Washington did not have an opportunity of obtaining even a copy of the bill until after the hearing had been held and closed.

Notwithstanding that the five years covered by the Sheppard-Towner Act were represented by its proponents as a period of demonstration, those responsible for that demonstration seem to have omitted altogether any plan whereby the result of the demonstration could be measured; they have not maintained any "control" whereby variations in maternal and infant mortality in areas under their supervision could be fairly compared with similar figures from areas not under their administration, and they have not presented fairly comparable figures to show variations in maternal and infant mortality in areas administered by them before they took over administration as compared with corresponding figures subsequently.—ED.]

"ARCHIVES OF THERAPEUTICS"

To the Editor.—This is to inform you that the entire editorial staff of the *Archives of Therapeutics* had resigned previous to the publication of the November issue, although the names were retained on that number.

Lack of support and cooperation on the part of the owners made it impossible to bring the publication up to the desired standard.

CARL P. SHERWIN, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

MALTOSE OR LACTOSE IN INFANT FEEDING

To the Editor:—The Mead Johnson Company of Evansville, Ind., states in its advertising matter that maltose (malt sugar) is more easily digested, assimilated and with less chance for fermentation or diarrhea than is lactose (milk sugar) in infant feeding. Is this statement true? To me, it seems only logical that lactose would produce a mixture more similar to mother's milk, than maltose or dextrin-maltose. What do you think about this? I have usually used a lactose mixture, and with success, in my infants deprived of mother's milk (the regular Holt formula). Please omit my name.

M.D., Wisconsin.

ANSWER.—The superiority of one form of carbohydrate over another in artificial feeding of infants has been much discussed during recent years. It is generally accepted that cow's milk without modification is not a satisfactory infant food. So far as the carbohydrate is concerned, about one-fifth to one-eighth ounce per pound of infant's body weight is required daily. To supply this amount it is necessary to add carbohydrates in some form. Admitting that lactose is the sugar supplied in human milk, it does not follow that it is the sugar best tolerated in another medium, such as cow's milk. It is generally believed that lactose is more laxative than sucrose—that it must be fed with a certain amount of caution, as fermentative upsets are likely to follow if amounts approximating that found in human milk are fed. There is cause for disagreement among clinicians, as it is important to consider the other food elements; i. e., the amounts of fat and protein fed as well as the medium in which they are fed. For example, when lactic acid milk is used, more added carbohydrate seems to be tolerated than when sweet milk mixtures are fed. Sucrose has the advantage of being much cheaper and is always available. Evidence has not been presented that it should not be used in infant feeding. With its general use in large infant welfare clinics where supervision is a matter of routine, there is less to be said against it as far as clinical results are concerned. The complaint that it is too sweet is not often encountered when the usual amounts are fed. The dextrin-maltose preparations possess certain advantages. When they are added to cow's milk mixtures, we have a combination of three forms of carbohydrates, lactose, dextrin and maltose, all having different reactions in the intestinal tract and different absorption rates. Because of the relatively slower conversion of dextrins to maltose and then to dextrose, fermentative processes are less likely to develop. Those preparations containing relatively more maltose are more laxative than those containing a higher percentage of dextrin (unless alkali salts such as potassium salts are added). It is common experience clinically that larger amounts of dextrin-maltose preparations may be fed as compared with the simple sugars. Obviously, when there is a lessened sugar tolerance such as occurs in many digestive disturbances, dextrin-maltose compounds may be used to advantage.

IRRITATION FROM POTASSIUM BICHROMATE

To the Editor:—I am the physician for a calendar company that does all sorts of printing and lithographing. Employees in one department get their hands in a potassium bichromate solution, and various degrees of dermatitis, burns and subacutely infected burns are the result. The usual treatment does not accomplish much. Can you advise anything in the way of treatment? Is there any counteracting application for immediate use or to be used at the end of each day at the factory? Can you give me any suggestion as to the treatment of the chronic skin inflammation and infected ulcers?

M.D., Ill.

ANSWER.—Potassium bichromate does not readily attack the unbroken skin. Chapped hands and small abrasions are the forerunners of most bichromate burns.

Workers in potassium bichromate solutions or dusts should be inspected for these small lesions and given protection against them. Collodion applications or hydrous wool fat have at times proved efficacious. Persons with dry skins are more susceptible than others. Such persons would profit by the nightly use of oil of theobroma or similar application to the hands and forearms. It has been suggested that workers who are exposed to solutions of potassium bichromate should have accessible to them basins of strontium acetate solution (5 per cent) in which to lave their hands and forearms frequently during the day.

When chromate dusts are present, or when steam arises from the process utilizing chromate, ulcers of the nasal septum are very common. Incipient ulcers have been caused to disappear through the daily use of an ointment composed of:

Zinc oxide	50 Gm.
Olive oil	22 Gm.
Liquefied sulphonated bitumen	18 Gm.
Balsam of Peru	10 Gm.

In the treatment of the acute stage of the dermatitis from potassium bichromate, wet dressings of diluted normal solution of aluminum acetate (Burow's solution) are efficacious. In well established "chrome holes"—chrome ulcers—it is often desirable to remove the worker from exposure. If he is infected, aluminum acetate wet dressings are helpful. At times, it becomes necessary to cut away sluggish escharotic tissues. Balsam of Peru and castor oil in equal parts promote healing.

VITALITY OF TEETH

To the Editor:—It seems to be established that a dead tooth, even without any inflammatory symptoms is a possible cause of poor health. In view of the importance of this matter, the general practitioner ought to be in a position to establish the vitality of the teeth. Will you kindly discuss all tests known for this purpose? Please omit my name.

M.D., Indiana.

ANSWER.—The testing of teeth to determine the vitality of their pulps as a rule should be done by dentists accustomed to such procedures, because a large proportion of the teeth to be tested carry large metallic fillings, crowns or bridges, all of which are excellent conductors of heat and electricity. As the tests depend on the results elicited by the application of hot and cold substances or electrical currents to the crowns, some knowledge of the effect produced by these metallic restorations is needed in the interpretation of these results.

At present, dentists are attempting to restore the crowns of teeth whenever possible without destroying and removing pulps. Pulp death under these large restorations (crowns, inlays and amalgam fillings) are becoming more common, and sometimes this condition is associated with a pulp abscess confined to part of the pulp chamber. It is apparent that a partially involved pulp may be a more serious menace than an infection at the apex, and that the identification of such teeth is desirable. In general, it may be said not only that

teeth lose their sensitiveness to heat and to electricity, but also that these reactions may be modified to a noteworthy degree by disease of the pulp.

Two methods for pulp testing are in general use, the electrical and the thermal. The electrical method is best adapted to teeth that either do not have metallic fillings or have small ones that do not come in contact with the gums or do not touch adjacent teeth. Any electric pulp tester may be used; most of them have a device for varying the amount of current. One contact point is applied to the dry crown of the suspected tooth and the result compared with other teeth in the same mouth that are not diseased. A tooth will not react at all to suitable electrical stimulation if the pulp is dead. Other teeth may require more or less current to produce a reaction comparable to that of a tooth with a healthy pulp.

Teeth that are either over or under sensitive to electrical stimulation are to be suspected of having diseased pulps. Such results must be interpreted on the basis of the previous history and the careful examination of the teeth and the associated roentgenograms. Often an exact diagnosis is impossible in such cases without opening the pulp chamber.

Heat is applied to teeth for testing purposes by small masses of heated gutta percha on the end of a probe. A jet of cold water from a small syringe is sprayed on them following the application of the hot gutta percha. The explanation of the results of this test is not always easy. A tooth without any noteworthy reaction probably has a dead pulp, and the presence of metal in the form of a filling or bridgework does not seem to alter the result. Pain following the cooling may be severe and of short duration, or may be less severe but persist for a long time. The latter is significant of a disease condition. The results so secured must be compared with those obtained from healthy teeth and related to the character of previous treatment in the form of fillings, inlays and bridgework. The greatest difficulty is encountered in the instances already referred to in which the pulp is only partly dead.

As was suggested at the outset, these tests should be made by one who is accustomed to the technic, who has the necessary apparatus, and who is familiar with the nature of pulp disease.

USE OF SCARLET FEVER ANTITOXIN FOLLOWING TETANUS ANTITOXIN

To the Editor:—I have a patient who was given an immunizing dose of tetanus antitoxin today. His family are ill with scarlet fever. Would it be safe to administer to this patient an immunizing dose of scarlet fever antitoxin, or a therapeutic one, should he develop the disease? Is it considered safe to use scarlet fever vaccine subsequent to the administration of tetanus antitoxin.

M.D., Iowa.

ANSWER.—Scarlet fever antitoxin may be administered following the injection of other antitoxins, including tetanus antitoxin, by one of the usual methods recommended for desensitization, such as injections of 0.1, 0.2 and 0.5 cc. of antitoxin at intervals of from fifteen to thirty minutes preceding the injection of the prophylactic or therapeutic dose of antitoxin.

ARTHRITIS OF SHOULDER JOINT

To the Editor:—Have I an arthritis of the shoulder joint, a subdeltoid bursitis, a neuritis, or what can be done for me? Last summer I tried to ring a church bell one Sunday morning and was jerked off my feet by the recoil of the bell rope, with an exceedingly severe pain in my left shoulder. The pain lasted only a few minutes, but since, there has been a gradually increasing disability of my left arm and shoulder. Spontaneous pain and tenderness are absent, but I have an uncomfortable, tired feeling at night and when I sit in a chair, reading. There is an increasing limitation of movement as to abduction and external rotation. Lately, it has become so severe that I cannot get my overcoat on without help. Any sudden movement of the arm, as when I stumble and throw out my arm to catch myself, causes very severe pain in the shoulder, especially at the insertion of the deltoid, and it gradually gets worse. I think I have some rheumatic tendency, as the distal phalangeal joint of my right middle finger has been enlarged for two years and was tender at first. I have just had my teeth examined roentgenographically and trouble was not found there. I am 55 years of age. Please do not publish my name.

M.D., Ohio.

ANSWER.—There may be a preexisting though symptomless arthritis localized to the shoulder joint by trauma. There may be traumatic arthritis, following which adhesions or fibrosis have supervened. In addition to the condition of the shoulder joint, there is probably some arthritis involving the cervical vertebrae with brachial neuritis, or subdeltoid bursitis or both.

The proper local treatment consists of absolute rest in bed with the application of an anodyne lotion and fomentations to the entire shoulder region. The arm should be gradually abducted by means of traction. Daily treatment consisting of baking, massage and diathermy may be given. The diet may be a factor in the general picture. All foci of infection, especially the teeth, throat and sinuses, should be investigated and treated if necessary.

If this treatment does not result in improvement, the arm should be put in a brace or cast holding it in a position of external rotation and abduction, flexion of the elbow, supination of the hand and dorsiflexion of the wrist.

DIAMEL IN DIABETES

To the Editor:—We have a boy in our schools who is taking a treatment for diabetes, called Diamel treatments, from Belleville, Ill. He is not under the care of any local physician and is not on a diet.

AGNES E. O'CONNOR, Escanaba, Mich.

ANSWER.—Diamel tablets are manufactured by the Maltbie Chemical Company. They are said in a recent catalogue of this firm to contain: "Lithium Carbonate, 1½ grs.; Sodium Arsenate, 1/20 gr.; Strychnine Arsenate, 1/180 gr.; Ext. Jambul Seed, ½ gr.; Ext. Gentian, ½ gr." The product is marketed with the following claim: "This tablet is employed for the reduction and elimination of sugar in the urine, which it is said to do rapidly. A trial will speedily prove the efficiency of this formula."

None of the components of Diamel tablets have any specific effect on the course of diabetes. Jambul was in vogue many years ago as a remedy for diabetes. It was tried, found wanting, and has long since been relegated to the therapeutic scrap heap. The preparation is open to every objection that may be urged against an irrational and worthless shotgun mixture marketed under a therapeutically suggestive name.

EJACULATIO PRAECOX

To the Editor:—What is the lesion that is responsible for ejaculatio praecox (premature ejaculation at coitus)? What is the treatment? Kindly omit my name.

M.D., California.

ANSWER.—Premature ejaculation is almost uniformly caused by chronic prostatitis. Passive congestion of the colliculus seminalis, often considered a causative factor, is only a concomitant symptom. All treatments confined to this condition fail to furnish relief.

The therapy of ejaculatio praecox is identical with the treatment of the causative prostatitis. Dilation of strictures, if present, systematic massage and heating of the prostate, antiseptic instillations to combat the posterior urethritis, avoidance of irritation by sexual excitation and alcohol are the essential therapeutic features.

Intercourse must not be attempted until the symptoms of prostatitis have entirely subsided.

COMPARATIVE VALUE OF NEOSILVOL AND MILD SILVER PROTEIN

To the Editor:—Is neosilvol considered as good as argyrol for infections of the eye and gonorrheal urethritis? Please omit name.

C. K. R.

ANSWER.—In a comparative experiment in which yeast was used as a test organism, Pilcher and Sollmann found neosilvol decidedly inferior to argyrol. Its antiseptic efficiency was found too low to be measured by the yeast method, while argyrol had a definite antiseptic value. Neosilvol is evidently devoid of power to kill yeast. It also does not have a fungicidal action. On the other hand, H. C. Hamilton, working in the research department of the manufacturer, finds that neosilvol has a decided and rather specific action against gonococci as compared with its effect on other organisms. A direct comparison between argyrol and neosilvol on cocci is not available.

KEEPING QUALITIES OF SMALLPOX VACCINE

To the Editor:—At what temperature will smallpox vaccine keep indefinitely? Will it hurt to freeze it? Please omit nome.

S. K. R.

ANSWER.—Smallpox vaccine will not keep indefinitely at any temperature. The product spoils quickly when warm but keeps well at icebox temperature. Freezing does not injure its potency.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 7. Sec., Dr. Harry C. DeVighne, Juneau.

CALIFORNIA: Los Angeles, Jan. 31 to Feb. 3. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

CONNECTICUT: State Board of Healing Arts (prerequisite to examination), Feb. 12. Sec., Dr. Charles M. Bakewell, Box 1895, Yale Station, New Haven. Regular Board, March 8-9. Sec., Dr. Robert L. Rowley, 79 Elm Street, Hartford. Homeopathic Board, Dr. Edwin C. M. Hall, 82 Grand Avenue, New Haven.

KANSAS: Topeka, Feb. 8. Sec., Dr. Albert S. Ross, Sabetha.

MAINE: Portland, March 8-9. Sec., Dr. Adam P. Leighton, Jr., 192 State Road, Portland.

MASSACHUSETTS: Boston, March 8-10. Sec., Dr. Frank M. Vaughan, Room 144, State House, Boston.

NEW HAMPSHIRE: Concord, March 10-11. Sec., Dr. Charles Duncan, Concord.

OKLAHOMA: Oklahoma City, March 8-9. Sec., Dr. J. M. Byrum, Shawnee.

PORTO RICO: San Juan, March 1. Sec., Dr. D. Biascoechea, 3 Allen Street, Box 804, San Juan.

VERMONT: Burlington, Feb. 8-10. Sec., Dr. W. Scott Nay, Underhill.

WEST VIRGINIA: Charleston, March 16. Sec., Dr. W. T. Henshaw, Charleston.

WYOMING: Cheyenne, Feb. 7-8. Sec., Dr. G. M. Anderson, Cheyenne.

Wisconsin October Examination

Dr. Robert E. Flynn, secretary of the Wisconsin Board of Medical Examiners, reports the written examination held at Eau Claire, Oct. 5, 1926. The examination covered 18 subjects and included 100 questions. An average of 75 per cent was required to pass. One candidate, an osteopath, took the examination and passed. Eleven candidates were licensed by reciprocity. The following colleges were represented:

College PASSED	Year Grad.	Per Cent
Osteopath		75

College LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Colorado School of Medicine	(1922)	Colorado
Rush Medical College	(1925)	Illinois
University of Illinois College of Medicine (1920), (1926) Illinois	(1914)	Iowa
St. Louis University School of Medicine	(1907)	Illinois
Washington University School of Medicine	(1920)	Missouri
University of Oklahoma School of Medicine	(1924)	Oklahoma
Medico-Chirurgical College of Philadelphia	(1898)	New Jersey
Meharry Medical College	(1915)	Georgia
University of Freiburg, Germany	(1900)	Washington

Colorado July Examination

Dr. David A. Strickler, secretary of the Colorado Board of Medical Examiners, reports the written examination held at Denver, July 6, 1926. The examination covered 8 subjects and included 80 questions. An average of 75 per cent was required to pass. Of the 66 candidates taking the physicians' and surgeons' examination 63, including 11 osteopaths, passed and 3, including 1 undergraduate, failed. Nineteen candidates were licensed by reciprocity. The following colleges were represented:

College PASSED	Year Grad.	Per Cent
University of Colorado School of Medicine (1926) 79, 80.3, 80.3, 82.2, 82.5, 82.6, 82.7, 83.9, 84, 84.4, 84.4, 84.4, 84.4, 84.9, 84.9, 85, 85.1, 85.1, 85.1, 85.3, 85.3, 86.2, 86.2, 86.3, 87.1, 88.2, 89, 90.1, 90.4, 91, 91.5, 92.4	(1926)	80, 89.6
Northwestern University Medical School	(1926)	77.5,
Rush Medical College	(1925)	88.6
State University of Iowa College of Medicine	(1926)	85.8
Kansas City College of Medicine and Surgery (1926) 75.1	(1921)	79,
Kansas City University of Physicians and Surgeons 77, 82, 85.5	(1926)	76.9,
St. Louis College of Physicians and Surgeons (1922) 75.4, 75.5, (1926) 79.7, 82.8, 83.6	(1921)	83.4,
St. Louis University School of Medicine	(1925)	86.3
National University of Ireland, Dublin	(1919)	90.8
University of Kharkov, Russia	(1916)*	75.1
Osteopaths..75.5, 76.4, 77, 77.6, 80.8, 81.3, 82.7, 83.3, 83.3, 84.5,		87.5

College FAILED	Year Grad.	Per Cent
St. Louis College of Physicians and Surgeons	(1926)	64.8
Lincoln Medical College of Cotner University	(1907)	59.4
Undergraduate		73.3

College LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Yale University School of Medicine	(1924)	Missouri
George Washington University Medical School	(1908)	Illinois
College of Physicians and Surgeons, Chicago (1908) Wisconsin	(1890)	Illinois
Indiana University School of Medicine	(1921), (1925)	Indiana
State University of Iowa College of Medicine	(1916)	Iowa
University of Kansas School of Medicine	(1924)	Kansas
Tulane Univ. of Louisiana School of Med.	(1919), (1921)	Mississippi
Johns Hopkins University Medical Department	(1922)	Michigan
Ensworth Medical College	(1907)	Kansas
John A. Creighton Medical College	(1896)	Nebraska
University of Nebraska College of Med.	(1919), (1925)	Nebraska
Medical College of Ohio, Cincinnati	(1888), (1897)	Ohio
Miami Medical College, Cincinnati	(1884)	Ohio
University of Pennsylvania School of Medicine	(1906)	New York

* Verification of graduation in process.

Arkansas November Reciprocity Report

Dr. J. W. Walker, secretary of the Arkansas Board of Medical Examiners, reports the meeting held at Little Rock, Nov. 9-10, 1926, at which 13 candidates were licensed by reciprocity. The following colleges were represented:

College LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Alabama School of Medicine	(1908)	Alabama
Rush Medical College	(1926)	Illinois
University of Kansas School of Medicine	(1921)	Kansas
Tulane Univ. of Louisiana School of Med. (1925) Alabama	(1924), (1925, 3)	Louisiana
University of Pennsylvania School of Medicine	(1920)	Minnesota
Meharry Medical College	(1906)	Oklahoma
Memphis Hospital Medical College	(1913)	Tennessee
University of Tennessee College of Medicine	(1923)	Tennessee
University of Texas Department of Medicine	(1924)	Texas

Social Medicine and Medical Economics

WHAT CONSTITUTES ADEQUATE MEDICAL SERVICE?

Results of the Management of Two Hundred Ambulatory Medical Cases *

SAMUEL BRADBURY, M.D.
Chief of Clinic, Medical Department, Clinic of the Cornell University Medical College
NEW YORK

Special interest in the patient-clinic[1] relationship was aroused at the Cornell Clinic by the following situation: Some five years ago in the medical department, we began the review of every clinical record with a view to making some final disposition of the case. It was found that a good many patients severed their connection with the clinic without instructions. This observation made us desirous of learning the reason for such action and the factors that determine satisfactory clinic service.

Within late years, realization of the economic loss caused by the degenerative and permanently disabling diseases has directed attention to their possible discovery in the earlier and more easily treated stages, and has aroused interest in the ambulatory patient. As a matter of fact, the situations presented by the average patient in the medical department of a clinic are frequently more obscure and difficult to interpret than those of the usual hospital case. Private medical practice, as well as medical service in clinics, faces the inherent difficulty of these cases not only in respect to diagnosis but in the accomplishment of treatment up to the point of securing satisfactory results. In contemporary medical schools and in modern literature, emphasis is laid rather on diagnosis than on the details of carrying out treatment, although it is on these details that successful results, from the point of view of the patient, largely depend.

With these points in mind, and with the aim of establishing some standards through which adequate service and the results of clinic care could be judged, a series of 200 cases of adults from the medical department of the Cornell Clinic were carefully investigated.

These patients were all adults, mostly between 21 and 50 years of age; two thirds were male, and nearly the same pro-

* The study will be published in detail in pamphlet form by the Committee on Dispensary Development of the United Hospital Fund of New York, which assisted financially in carrying on the study.

1. The word "clinic" is used throughout this article to describe a public or semipublic organization for the treatment of ambulatory patients.

portion were married. From their diagnoses, one fourth had some disease of the digestive tract; one sixth had involvements of the circulatory system and one sixth of the locomotor system; one twelfth each presented diseases of the respiratory. endocrine and nervous systems, and the remainder had genito-urinary, metabolic or infectious diseases, with a few rare conditions.

From the standpoint of the duration of illness, more than half had suffered for more than two years, a fourth for from six months to two years, and the remaining fourth for less than six months.

Obviously, a group of persons with chronic diseases and restricted incomes is one that taxes medical ability and ingenuity, and is one in which a high percentage of satisfactory results is difficult to obtain. As a matter of fact, it is probably the group that goes from one physician's office to another, with fairly long intervals in which there is no medical supervision.

METHODS

Three physicians and the chief of the clinic of the medical department participated in the study, examined and handled their own patients as admitted, and used the usual history and physical examination forms. They were also expected to describe (*a*) the condition on admission; (*b*) what the condition should be after treatment, noting the time necessary for attainment of the predicted state, and (*c*) the actual condition of the patient on the termination of his connection with the clinic or at the expiration of the time necessary for treatment, if he was still under the treatment advised. They were to make a notation of every item of advice offered, with changes necessitated by progress or because of impracticability, and on return visits were to note whether or not each item of treatment had been carried out and to what extent, giving reasons in the case of failure. They were also expected to study these procedures in individual cases and to determine their influence on the outcome. At the close of each case they were to summarize the results achieved and to estimate factors making for or against arrival at the predicted point, showing where any fault lay and suggesting measures for its correction.

Medical social workers aided the physicians in the study of the social and economic factors bearing on the medical problems of the patients, in ascertaining the patients' attitude and understanding of the treatment advised and in determining their ability to carry it out. Home visits were occasionally necessary, though much of the interviewing was done in the clinic. The social workers also assisted in tabulation of the records under the physicians' instructions.

In the appraisal of medical results, two methods were utilized: first, the judgment of medical results according to the condition and progress of the patient, as estimated by the physician by means of a method to be described later; second, judgment of the results according to the disposition of the case. In the endeavor to determine a method of describing the patient's condition and its changes, it was realized that any one of several criteria might be used on which to base these estimates: On the one hand, purely clinical changes might be taken; on the other hand, the complaints or feelings of the patient might be utilized. It was decided, after much consideration, to utilize as a measure of illness a combination that would take into account several factors. The patient's symptoms, his condition as judged by physical examination and his ability to work were all to be considered, as these would involve the judgment of both patient and physician. This led to the formulation of a disability rating, as it was called, which was carefully prepared, graded and codified for the tabulation of each case.

First, cases were grouped as having temporary (T) or permanent (P) illnesses, and then under each broad classification progressive degrees of disability up to and including death were arranged and coded as in table 1.

TABLE 1.—*Progressive Degrees of Disability*

O	Health
T1	No symptoms or lost earning power
T2	Illness allows usual work
T3	Illness allows partial work
T4	Short inability to work (one month or less)
T5	Long inability to work
T6	Death
P1	No symptoms or lost earning power
P2	Illness allows usual work
P3	Illness allows partial work
P4	Illness causes temporary loss of work
P5	Illness necessitates permanent change of work
P6	Permanent inability to work
P7	Death

In eighty-nine of the cases studied, treatment was completed during the investigation and the results were tabulated to show changes in disability. Comparison of the condition actually reached by this group within the time gaged, with the previously written prognosis and the time estimated for improvement is given in table 2.

TABLE 2.—*Comparison of Actual Condition with Prognosis*

	Number
Disability rate predicted and reached at time of discharge	52
Rating at time of discharge better than that predicted	4
Condition predicted not attained at time of discharge	33

Sixteen of the eighty-nine patients were not expected to improve in rating; fifteen remained at the same disability level, and one attained a better rating.

Of the fifty-nine other cases in which the time estimated for attainment of the prognosis had not expired by the end of the study, some could undoubtedly have been included had it been possible to complete the follow-up. Twenty-two of this group had temporary, and thirty-two permanent illnesses. Eleven of the fifty-nine were discharged by the clinic, and twenty were transferred to other medical care. Twenty-eight were "lost"; that is, they ceased treatment without being either discharged or transferred.

Several objections to and difficulties in the use of the disability rating were found, and a somewhat simpler code was devised for use in future studies. Nevertheless, it was believed that certain values were derived by the use of this rating, both in judging results and in contributing to the better care of the patient.

First, it became apparent that the necessity of committing himself on the condition his patient should achieve under ordinarily good care meant considerably more to the physician than simply writing a prognosis; it meant the setting of a goal at which the patient should arrive.

Second, this setting of a goal for the patient made the physician think through the method by which the expected mark was to be reached and evolve a plan of treatment.

Third, as the data accumulated it was seen that though there might be a half dozen or more abnormalities set down as the diagnosis, treatment actually was directed toward only one or two of these, though the other conditions might possibly have influenced the prognosis and perhaps caused modification of the advice. This led to a brief statement of opinion as to the actual cause of illness termed "statement of the medical problem." As first used, this statement served only as a basis for the outline of treatment. Later it was extended to include projected laboratory or clinical examination of obscure points in order to clarify the diagnosis. This statement of the medical problem should precede, it is true, the making of a plan of treatment, but, as a matter of fact, its use grew out of the latter.

Another method of judging service rendered the patient, in addition to that of utilizing the disability rating, is furnished by the disposition of the case given in the clinical record. At any given moment a patient who has started treatment in the clinic will be found set down in the record in one of four groups. He will be either (1) under treatment, (2) transferred to other medical care, (3) discharged or (4) lost. All cases in this series were tabulated from the records from this point of view.

It was found that fifty-two of the 169 patients were discharged, of whom eight were advised to return for observation at a later period, and the rest were considered cured or substantially improved; fifty-seven were transferred to other medical care, forty-three of these to other departments in the clinic, and sixty were lost. It seems probable, when one considers the diagnoses, that more of the discharged patients should have been instructed to return for observation.

The material secured by the physicians and social workers concerning each case made it possible to form some judgment, in a number of instances, as to the reasons why "lost" patients had failed to continue treatment. The element of expense of treatment was found to be a relatively minor factor, though an important one; the chief cause was the inherent difficulty of carrying through advice which, in these instances of chronic or long continued illness among adults, often required modification of habits of life, occupation and social relationships which, particularly among families of very moderate means, are far from easy even with the best of intentions.

Analysis of the items of advice given the patients revealed the wide therapeutic field and the complexity of treatment necessary for ambulatory patients. Directions for treatment on subjects with which the patient is often unfamiliar necessitate careful explanation, not only of exactly what is required, but also of how it may be accomplished and what may be expected. When the patient understands the reason for every instruction, he will be more intelligent in its use, and when he can observe its beneficial effect, he will be encouraged to continue.

COMMENT

While the study obviously deals with too few cases to yield a statistical conclusion, it is believed that it lays emphasis on two important and somewhat neglected aspects of medical service; namely, the analysis of the aspects of treatment which involve the intelligence and cooperation of the patient, and the formulation of criteria of methods whereby results of treatment can be systematically judged.

The study of this group of rather complex and long-term medical cases of adults has brought out strongly the large importance, in successful treatment, of defining and recording the essential medical problem of the patient as well as the diagnosis. The routine notation of a prognosis has been shown to be stimulating to the physician and useful from the standpoint of the patient. An estimate of the illness, which we have called a disability rating, has been found helpful to the physician in making plans and in judging results. Of especial importance has appeared to be the making of a plan of treatment that takes into account both the medical problem and the patient's intelligence, personality, background and resources. The study has brought out the uses and value of the medical-social worker in helping the physician to define the patient and to carry out this plan of treatment.

The results of this study should be developed by analysis of a larger number of cases and of cases of other medical or surgical types. At a number of points the present study is not conclusive, and it must be regarded rather as a suggestive contribution to medical practice than as a definitive account of observations or conclusions. It is hoped that this attempt may stimulate others to make similar investigations of the same problems.

Book Notices

REMINGTON'S PRACTICE OF PHARMACY. A Treatise on the Making, Standardizing and Dispensing of Official, Unofficial and Extemporaneous Pharmaceutical Preparations, with Descriptions of Medicinal Substances, Their Properties, Uses, and Doses and Such Other Professional Service in Connection with Community Health as the Pharmacist may be called Upon to Render. Intended for the Use of Pharmacists and Physicians and as a Textbook for Students. Seventh edition. By E. Fullerton Cook, P.D., Ph.M., Chairman of the Committee of Revision of the Pharmacopeia of the United States of America, and Charles H. LaWall, Ph.M., Pharm.D., Sc.D., Dean of Pharmacy, and Professor of Theory and Practice of Pharmacy of the Philadelphia College of Pharmacy and Science. Cloth. Price, $10. Pp. 2090, with illustrations. Philadelphia: J. B. Lippincott Company, 1926.

This textbook, which for a generation has occupied an important place in the pharmacist's library, has undergone a revision in accordance with the United States Pharmacopeia X, National Formulary V, and New and Nonofficial Remedies, 1925. Every angle of pharmaceutic knowledge and practice has been considered. The scope of the book is broad, covering sixteen sections, besides glossaries of uncommon pharmaceutic and technical names, medical terms and an exceedingly comprehensive index. The therapeutic uses for the individual drugs are given in a paragraph just sufficient to acquaint the pharmacist and pharmaceutic student with the general actions. Although the therapeutic discussions are not particularly critical, they are more conservative than in most books of this type.

The first two sections include a brief historical introduction, a discussion of the pharmacopeias and other standard books on pharmacy, and a thorough description of the various technical operations in pharmacy. The next three sections cover the galenicals and other pharmaceutic preparations; inorganic chemistry, with ionic dissociation, and organic chemistry, including a brief summary on vitamins. The sixth section, on perfumery and cosmetics, embraces two interesting chapters dealing with the art of perfumery and perfume products, describing many practical and proved formulas. The seven subsequent sections describe in detail legal responsibility, business requirements, qualifications of an analyst (including discussion of urinalysis, and chemical and biologic assays), chemical control in pharmaceutic manufacturing, and an extensive consideration of the problems of the professional and prescription pharmacist.

The remaining sections are devoted briefly to the essentials of homeopathic pharmacy, which probably can be omitted from future editions because of the rapid waning of this sect; the pharmacist in community health service; biologic products; toxicology and antidotes, and an outline of a laboratory course in pharmaceutic manufacturing and dispensing. The book is illustrated by numerous photographs and drawings. The printing is good and free from typographic errors. It is a valuable contribution and will retain its place as one of the standard textbooks on pharmacy.

HERZKRANKHEITEN BEI FRAUEN. Von Prof. Dr. N. Jagić. Paper. Price, 3.60 marks. Pp. 103. Berlin: Urban & Schwarzenberg, 1926.

In this little volume the author undertakes an account of heart disease in women as it is influenced by their physiologic and anatomic characteristics, and by events peculiar to their life. Not only are the effects of these differences considered, but also the clinical observations and treatment. It is obvious that many important factors cannot be discussed as fully as desirable. This applies to the effects of pregnancy or the indications for interrupting pregnancy, two of many things which the reader turning to a special work for help would be glad to see taken up much more fully. There is little of importance for which the physician could not better turn to some authoritative reference book on heart disease.

THE DUODENAL TUBE AND ITS POSSIBILITIES. By Max Einhorn, M.D., Professor of Medicine at the New York Postgraduate Medical School. Second edition. Cloth. Price, $3, net. Pp. 206, with 126 illustrations. Philadelphia: F. A. Davis Company, 1926.

This is an elaboration of the first edition. It is splendidly written and illustrated. The author describes in great detail the various tests, qualitative and quantitative, for duodenal

contents. The colorimetric methods for diagnosis of biliary and pancreatic disease are hampered by so many variations that may occur in a normal person without any evidence of disease that one would be reluctant to hazard a diagnosis merely on color changes in the duodenal contents. The method of duodenal feeding may be better done by the use of a vacuum bottle and rectal drip rather than the syringe-glass method. There are numerous other instruments, measured and described, which are of distinct value.

DAS THYREOTOXIKOSESYNDROM UND SEINE REAKTION BEI KLEINEN JODDOSEN. Von Johannes Wahlberg. Paper. Pp. 148, with illustrations. Helsingfors: Mercators Tryckeri, 1926.

This is an inaugural thesis read before the faculty of the University of Helsingfors. It presents the results of an investigation of the effects of iodine therapy on patients with thyrotoxicosis, when continued over a period of months. There is much more of interest to the reader, however, than merely the results of the investigation, valuable as they are. In the introduction is given a short but broad view of the conception of thyrotoxicosis, and of the nomenclature. Due weight is given the various views of other authors on the subject of classification. This chapter is followed by a comprehensive but brief historical review. The investigation was conducted on twenty ambulatory cases of varying grades of severity, from doubtful cases to those of the more severe types. The patients were put on varying doses of potassium iodide and followed for from two to six months, as long as was necessary to determine the eventual results of the treatment. Full histories are given with each case, with physical and laboratory examination, the dosage given, and the progress of the case under the treatment. The reader has full data on which to base his own opinion, independently of that of the author. The cases are fully analyzed and discussed in subsequent chapters. The results in the twenty cases showed an initial temporary improvement, followed by a return of the symptoms in greater severity than before. If the treatment was interrupted, there was also an increase in the severity of the symptoms. The author states that iodine therapy should be used only as a palliative measure, and warns against its use as a curative measure. The book is an especially thorough exposition of the problem as seen by the author, and is to be recommended to all those interested in thyroid disease. There is a full and complete index to the literature.

A HANDBOOK OF RENAL SURGERY. By F. MeG. Loughnane, F.R.C.S., Hon. Surgeon, St. Mary's Hospital, Plaistow. Cloth. Price, $3.75. Pp. 270, with 46 illustrations. New York: Longmans, Green and Company, Ltd., 1926.

The author aimed to furnish the general practitioner and student with a concise and at the same time complete statement of renal surgery. Orthographic errors, such as mesonephros instead of mesonephron, and "tubercular" instead of "tuberculous" kidney are frequent. The author makes the surprising statement that a complete urinalysis is not necessary in surgical cases. He condemns cryoscopy and the search for electroconductivity as difficult and frequently inaccurate. The former statement may apply to the conductivity test but certainly is not applicable to cryoscopy, a simple procedure. At that, both these tests furnish the best information concerning the molecular concentration of the urine. Blood chemistry, an indispensable part of the renal testing, is dismissed with the estimation of the cholesterol content, an indirect and doubtful method of determining renal efficiency. Hematuria during nephritis is ascribed to the chronic cases only, in direct contradiction to the well known fact that acute glomerulonephritis is always combined with hematuria, quite often of a high degree. The assertion that acute pyelitis occurs practically only in pregnant women cannot be sustained in view of the frequency of acute pyelitis in children. The differentiation between polyuria and pollakiuria is not sufficiently emphasized. In recommending the alkalization of the urine for the treatment of pyelitis, the author forgets to suggest what ought to be done in cases of pyelitis that begin and continue with alkaline urine. The chapters devoted to the surgical intervention necessitated by renal disturbances are characterized in the main by sound reasoning, though such vague definitions as "perinephritis is inflammation in the region of the kidney, it is retroperitoneal" might better have been omitted.

DIE BESTIMMUNG DES ASTIGMATISMUS DURCH DIE SCHATTENPROBE MIT CYLINDERGLÄSERN. Von Prof. Dr. K. Lindner, Vorstand der Augenabteilung der allgemeinen Poliklinik in Wien. Paper. Price, 7.50 marks. Pp. 111, with 83 illustrations. Berlin: S. Karger, 1926.

Cylinder retinoscopy! What a formidable sounding method to the ophthalmologist trained to do retinoscopy with spherical lenses only. And still really not any more difficult after the principles and basic rules are understood. But to do an accurate cylinder retinoscopy, the ophthalmologist must be able first to do an accurate spherical lens retinoscopy, a point which Lindner emphasizes. One is accustomed to think of cylinder retinoscopy as a Vienna product; in reality, it was first described in France and then elaborated at length by Jackson and Duane. It has been practiced in Vienna only within the last ten years. In his booklet, Lindner has described the method at length, avoiding the mathematical pitfalls in which the average ophthalmologist is so easily trapped. The various steps and many of the conditions encountered are illustrated with drawings that are more or less self-explanatory. It is to be regretted that Lindner has not followed more closely in the footsteps of his teacher, Ernst Fuchs, the dean of ophthalmology, and avoided the multipediculated sentences which make scientific German a bugbear to extra-Teutonic readers. Nevertheless, the book is well worth while, for the mastery of cylinder retinoscopy can be accomplished by a thorough perusal and continued application of the rules it contains. In one office were two ophthalmologists: one trained by Lindner in cylinder retinoscopy and one trained in Philadelphia in spherical retinoscopy. For a long time the two did defraction on the same patients, independently. The results did not vary more than one fourth of a diopter and required the same amount of time.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

ANNUAL REPORT FOR THE YEAR 1925 OF THE SOUTH AFRICAN INSTITUTE FOR MEDICAL RESEARCH, JOHANNESBURG. Sir Spencer Lister, M.R.C.S., L.R.C.P., Director. Paper. Pp. 37. Johannesburg: South African Institute for Medical Research, 1926.

HEALTH SERVICE IN AMERICAN COLLEGES AND UNIVERSITIES. Division of Hygiene and Public Health, Aug. 1, 1926. University of Michigan Bulletin. New Series, vol. XXVIII, No. II. Paper. Pp. 165. Ann Arbor: University of Michigan, 1926.

LES VOMISSEMENTS PÉRIODIQUES AVEC ACÉTONÉMIE. Par A.-B. Marfan, professeur à la faculté de médecine, médecin de l'hospice des enfants-assistés. Second edition. Paper. Price, 28 cents. Pp. 85. Paris: Masson & Cie, 1926.

THÉRAPEUTIQUE CHIRURGICALE OPHTALMOLOGIQUE. Par Duverger, professeur à la faculté de médecine de Strasbourg, et Velter, professeur agrégé à la faculté de Paris. Cloth. Pp. 480, with illustrations. Paris: Masson & Cie, 1926.

THE MEDICAL RECORD VISITING LIST OR PHYSICIANS' DIARY FOR 1927. Leather. Price, 30 patients per week, $1.75; 60 patients, $2; and for 90 patients, $2.50. New York: William Wood & Company, 1926.

ANNUAL REPORT OF THE DIRECTOR OF THE CENSUS TO THE SECRETARY OF COMMERCE FOR THE FISCAL YEAR ENDED JUNE 30, 1926. Paper. Pp. 16. Washington: Government Printing Office, 1926.

CONTRIBUCIÓN AL ESTUDIO DE LA HERENCIA EN LA TUBERCULOSIS. Por el Dr. R. Pla y Armengol, Director del Instituto Ravetllat-Pla. Paper. Pp. 45. Barcelona: Tipografía Emporium, 1926.

FOURTH ANNUAL REPORT OF THE GENERAL EXECUTIVE OF THE AMERICAN CHILD HEALTH ASSOCIATION. By S. J. Crumbine, M.D. Paper. Pp. 24. New York: 1926.

TRAITEMENT CURATIF DU TÉTANOS. Par le Docteur Andrés Sáenz de Santa-Maria de la faculte de médecine du Yucatan. Paper. Pp. 58. Paris: Marcel Giard, 1926.

Medicolegal

Plea of Former Jeopardy Not Available—Valid Law

(Lewis v. State Board of Medical Examiners (Ga.), 133 S. E. R. 469)

The Supreme Court of Georgia, in affirming a judgment on a verdict directed against defendant Lewis, says that he, a practicing physician, had been notified to appear before the state board of medical examiners to show cause why his license to practice medicine in the state should not be revoked, on a charge which had been preferred by the board that he had been convicted in a United States district court for a violation of the Harrison Narcotic Law. The defendant filed a plea of former jeopardy, setting up the trial, conviction, and service of sentence in a case growing out of an indictment and conviction in the federal court. But the Supreme Court of Georgia is of the opinion that, under the pleadings in this case, including the defendant's admission in said plea that he had been indicted, tried and convicted and sentenced in the federal court, and of the facts, that the plea of former jeopardy was without merit. For the defendant to avail himself of the plea of former jeopardy, it must appear that he was being tried for the same offense as he was tried and convicted for in the previous case. But such was not the case here. The two cases were entirely different, and therefore the plea of former jeopardy was without merit.

Section 14 of the act of 1918 relative to the board of medical examiners is not violative of the provision of the state constitution that the right of trial by jury, except when it is otherwise provided in the constitution, shall remain inviolate; and provisions of the constitution of the United States applying to powers exercised by the government of the United States, and not to those of the separate states, do not apply to a case like the present one.

Injury from Stepping on Nail Classed as "Sickness"

(Doody v. Davie et al. (Calif.), 246 Pac. R. 339)

The District Court of Appeals of California, first district, division 2, in affirming a judgment for the petitioner, says that he was a member of the Oakland fire department and that the defendants were members of the city council which passed a resolution refusing to pay his claim for salary during a period when he was incapacitated from performing his duties as a member of the fire department by reason of a sore foot brought about by his stepping on a nail while in the yard of his home on his day off. The question presented was one of the construction of section 100 of the city's charter, providing that a member of the fire department becoming incapacitated for duty by reason of sickness should be entitled to sixty days' sick leave without loss of pay. Was the petitioner "incapacitated for duty by reason of sickness," within the meaning of that provision? The defendants contended that he was not, based on the fact that he did not develop infection in his foot, or any nausea or general bodily illness. It was argued that a distinction should be drawn between an injury received while off duty and an illness which did not have a traumatic cause, and that this view was reenforced by the provisions of section 100½ that in cases of injury sustained while in the performance of duty, firemen should receive medical aid, etc., in addition to the sick leave provided for, and that such injured firemen should receive full pay during the continuance of such disability. But it seems to the court more logical to conclude that since, in the case of injuries occurring during the course of the employment, a fireman, in addition to his sick leave or payment of salary during disability, was allowed, by section 100½, medical, surgical and hospital treatment, including medicines, medical and surgical supplies, crutches and apparatus, including artificial members, this section created a difference between injuries in the course of performance of duty and those sustained at another time, and that in the latter case the fireman was merely entitled to the usual sick leave provided for in section 100.

The defendants asserted that the word "sickness" in section 100 did not include "injury." It certainly did in its popular significance and in the definitions found in such a standard work as Bouvier's Law Dictionary, wherein it is said: "Sickness. By sickness is understood any affection of the body which deprives it temporarily of the power to fulfil its usual functions. . . . Sickness is either such as affects the body generally, or only some part of it." The defendants admitted that if, as a result of his injury, the petitioner had developed a fever or nausea he would have been entitled to sick leave. The differentiation between such a case and the instant one was a very fine one, and one that seems to this court insusceptible of practical application. If a fireman broke his leg or his wrist while off duty, the continuance of his salary would depend on whether or not his constitution was strong enough to stand the shock and pain without some bodily reactions, such as fever, nausea or nervousness. The inquiry into this question of fact would certainly be most unsatisfactory; its determination could not depend on the degree of temperature developed, or the amount of nausea, faintness, dizziness or nervousness that would result. It is almost impossible to conceive of any injury severe enough to incapacitate a man which would not cause some general variation from normal in the functions of the body.

There are not any authorities directly in point on this question, but this court agrees with the trial court that the injury suffered by the petitioner constituted a "sickness" within the meaning of section 100 of the city's charter. Hearing denied by the Supreme Court of California.

Death from Rupture of Blood Vessel from Vomiting

(Ross v. International Travelers' Ass'n (Texas), 283 S. W. R. 621)

The Court of Civil Appeals of Texas, in reversing a judgment that was rendered for the defendant on general demurrer, says that the action was by the beneficiary, on a policy of accident insurance. Taking the allegations of the petition as presenting the facts, the death of the insured was produced by the rupture of a blood vessel acting on the brain. The rupture of the blood vessel was caused through straining, or the violence of it in vomiting, produced by the nausea arising from indigestion. The straining in vomiting was not by intention or purpose. The defendant insisted that such facts did not create a liability under the policy, because there was not definite shock or force or injury from external causes which inflicted the injury, but merely an antecedent sickness and disease, with total absence of any bodily injury producing the death. But the policy did not stipulate that the injury should be caused by an external and violent agency. It provided for payment for loss resulting in the case of pure accident. It is thought that it would be difficult to say that the facts alleged did not show a case of death from "bodily injuries, effected directly, independently, and exclusively of all other causes, through accidental means." The rupture of a blood vessel is a bodily injury, capable of producing death. The violence of the straining in vomiting was the direct and emanative cause of the rupture. The violence or force causing the rupture was the accidental means. The nausea and vomiting were harmless without the violence of straining. The rupture of a blood vessel by force or strain is "accidental." The petition was not subject to a general demurrer.

Society Proceedings

COMING MEETINGS

American Association for the Study of Goiter, Philadelphia, Jan. 31-Feb. 2. Dr. Kerwin Kinard, Bryant Building, Kansas City, Mo., Corresponding Secretary.

American College of Physicians, Cleveland, Feb. 21-25. Dr. G. M. Piersol, 1913 Spruce Street, Philadelphia, Secretary General.

American Society for the Control of Cancer, New York City, March 5. Dr. T. M. Debevoise, 26 Broadway, New York City, Secretary.

Pacific Coast Surgical Association, Del Monte, California, Feb. 25-26. Dr. E. L. Gilcreest, Fitzhugh Building, San Francisco, Secretary.

Tri-States Medical Association of Mississippi, Arkansas and Tennessee, Memphis, Tenn., Feb. 1-3. Dr. A. F. Cooper, Bank of Commerce Building, Memphis, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Hygiene, Baltimore

6: 719-803 (Nov.) 1926

Relationship of Epithelioma Contagiosum Virus of Fowls to Vaccine Virus. H. B. Andervont, Baltimore.—p. 719.

*Bacterial Flora of Market Oyster. C. Eliot, Baltimore.—p. 755.

Colon-Aerogenes Group from Oyster. C. Eliot, Baltimore.—p. 777.

*Coccidiosis in Mammals. J. M. Andrews, Baltimore.—p. 784.

Bacterial Flora of Market Oyster.—Eliot made a study of the bacteriology and decomposition of oysters for the purpose of analyzing the bacterial flora of market oysters, and to identify the organisms responsible for the spoilage and decomposition of this highly perishable food product. He found that shucked oysters and shell oysters kept at the laboratory temperatures show a sudden and maximum rise in total count from the second to the fourth day of storage. The *Bacillus coli* score of oysters stored in a cool basement increased from 4 to 500,000 in fourteen days. As signs of spoilage appeared, the *B. coli* score decreased. The bacteria of the decomposing oyster are divided into five principal groups: (*a*) the colon-aerogenes group; (*b*) the streptococci; (*c*) the "water bacteria," including members of the green fluorescent, the yellow pigmented and the nonpigmented groups, and vibrios; (*d*) the anaerobes, and (*e*) the incidental organisms, such as the chromogenic cocci and the aerobic spore-formers. In shucked oysters, the souring process may be initiated by either the colon-aerogenes group or the streptococci. If the streptococci are present in large numbers, the colon-aerogenes group is inhibited by the second day. After a varying period of time, twelve days or longer, the water forms multiply rapidly, there is a reversion in reaction and actual decomposition of the oyster meats begins. There is a slimy chromogenic growth and a marked softening, and, in some instances, liquefaction of the oyster meat when these organisms are grown on them. Members of these groups are always found abundantly in spoiling oysters. Other water forms which are also abundant in the spoiling oyster do not initiate decomposition processes in sterilized oysters. Several types of anaerobes multiply in spoiling oysters and produce large amounts of gas, but apparently bring about no putrefactive changes.

Coccidiosis in Mammals.—The course of infection with coccidiosis in cats has been studied by Andrews. One attack of coccidiosis seems to render cats and dogs nonsusceptible to subsequent infection by the same organism. This immunity lasts for seven months, and probably for life. Regarding human infections with *Isospora*, it is the opinion of Andrews that the disease is caused by a coccidium specific to man, and that human coccidiosis may occur much more frequently than reports indicate.

Annals of Clinical Medicine, Baltimore

5: 319-425 (Oct.) 1926

*Clinical Significance of Achylia Gastrica. J. Friedenwald and T. H. Morrison, Baltimore.—p. 319.

Primary Carcinoma in Duodenal Diverticulum. T. H. Morrison and M. Feldman, Baltimore.—p. 326.

*Gallbladder Visualization by Oral Administration of Tetraiodophenolphthalein. T. H. Morrison and M. Feldman, Baltimore.—p. 330.

*Fasting Blood Sugar and Urea in Nondiabetic Patients. H. J. John, Cleveland.—p. 340.

*Aortitis Associated with System Infections. M. H. Brown, Toronto.—p. 353.

*Blood Transfusion in Purpura Hemorrhagica and Acute Hemolytic Jaundice. H. W. Jones, Philadelphia.—p. 367.

Seasonal (Pollen) Hay-Fever with Negative Skin Tests: Results of Treatment. R. A. Kern, Philadelphia.—p. 371.

Proper Management of Allergic Phenomena; Nonspecific Therapy in Bronchial Asthma and Hay-Fever. N. S. Schiff, New York.—p. 374.

Trichotillomania: Case. I. C. Sutton and A. R. Timme, Hollywood, Calif.—p. 402.

*Amyloidosis of Suprarenals as Cause of Addison's Disease. W. C. Hunter and H. P. Rush, Portland, Ore.—p. 404.

Clinical Significance of Achylia Gastrica.—One hundred and sixty cases of achylia gastrica are analyzed by Friedenwald and Morrison, arranged according to age and sex. It is evident that achylia gastrica occurs more frequently between the ages of 30 and 60 years and is more common in females than males. The authors were only able to determine that pernicious anemia definitely developed in a single instance; a severe type of chronic gastro-enteritis in another, and that achylia gastrica was noted in several members of each of two families. Primary achylia gastrica may continue on ordinarily during the entire life time of the individual without producing any symptoms whatever, though gastric disturbances are common in the largest proportion of cases and in a smaller number, intestinal upsets are noted.

Visualization of Gallbladder.—Of eighty-four gallbladder cases, seventy-nine were examined by Morrison and Feldman by the oral and five by the intravenous method of administration of the dye. In seven cases the gallbladder was found to be normal. The gallbladder shadow was visualized in fifty-five cases and was absent in twenty-nine. Twenty-two of the fifty-five visualized cases showed poor filling or faint shadows. In two instances, the faint shadows were accounted for, one being due to an insufficient amount of dye, the other to an anastomosis between the gallbladder and the intestines. Of the twenty-nine cases in which the gallbladder shadow was absent, two were accounted for in the following manner: in one there was a failure of the pills to disintegrate, and they could be counted throughout the intestinal tract; the second case was due to an insufficient amount of dye, for when the dose was increased to almost double the quantity in a subsequent examination, the gallbladder was well filled. Of the visualized cases, two showed positive stones, and eight negative stones; there were three in which faint shadows were noted after thirty-five hours, indicating a stasis. In sixteen cases which came to operation, a preoperative diagnosis of gallstones or gallbladder disease was made. Of this group, the gallbladder was visualized in nine cases and was absent in seven. Gallstones were found in nine cases, stone in the cystic duct in two and stone in the common duct in two instances. Three cases showed definite evidence of cholecystitis and adhesions.

Fasting Blood Sugar and Urea in Nondiabetic Patients.—In a series of 1,000 nondiabetic patients examined by John, the range of the fasting blood sugar content was quite uniform in all decades, with the exception of the first decade in which it ranged from 84 to 102 mg. per hundred cubic centimeters. In the majority of cases, it lay between 80 and 110 mg. per hundred cubic centimeters. The average of all estimations, however, shows a very slight but uniform ascent with each succeeding decade. The incidence of blood urea retention is higher in the later decades of life. While the blood sugar also tends to rise in the later decades, in many cases it is low as compared with the markedly increased urea. This suggests that the same underlying factor does not govern both of these elements. Urea is a metabolite and blood sugar is not, and the kidneys govern the first and only slightly affect the second. In sixty-eight cases of hyperthyroidism, even a slight rise above the normal blood sugar level occurred in only six cases. In eight cases of gastro-intestinal carcinoma, the fasting blood sugar was normal in all but one, in which it was 134 mg. per hundred cubic centimeters. In forty-seven cases of arthritis, the blood sugar was normal with only two exceptions, in which it was 136 and 139 mg. per hundred cubic centimeters, respectively. In forty-one cases of obesity, the fasting blood sugar was above 120 mg. in seven instances. In fifty-four cases of diseases of the genito-urinary system other than the kidneys, the fasting blood sugar was above 120 mg. in five cases; in forty-three cases of kidney disease it was above the normal in nine cases; in seventy-eight cases of hypertension and arteriosclerosis it was above the normal in eleven cases.

Aortitis Associated with Systemic Infections.—Brown examined the aorta in twenty-nine cases of pneumonia, endo-

carditis, typhoid, measles and other acute infections. The characteristic lesion in the aortic wall in acute infections is a nonsuppurative inflammatory reaction about the vasa vasorum of the outer half of the media, with necrosis of the neighboring muscle cells and elastic fibers. Brown is of the opinion that the common mode of localization of acute infections is by way of the adventitia through the vasa vasorum and thence to the media producing a mesarteritis. Acute infectious diseases play an important part in arteriosclerosis.

Blood Transfusion in Purpura Hemorrhagica and Hemolytic Jaundice.—Jones asserts that transfusions of whole undiluted blood will save life in purpura hemorrhagica; they are extremely useful in preparing the patient for the operation of splenectomy in both purpura and hemolytic jaundice; they shorten convalescence in both these conditions, and in certain cases of purpura hemorrhagica, the blood elements can be brought to a normal level and the patient enabled to go on for a number of years with little trouble.

Amyloidosis as Cause of Addison's Disease.—Hunter and Rush report a case of amyloidosis of the suprarenals of sufficient degree to bring on Addison's disease. Of particular interest clinically was the multiplicity of symptoms referable to different organs and systems. Extensive active pulmonary tuberculosis and marked renal insufficiency were very evident. The latter proved to be due to amyloidosis of the kidneys with an accentuation of insufficiency because of some acute infection, as shown by marked parenchymatous degeneration. In addition, the patient exhibited very definite signs and symptoms of Addison's disease.

Annals of Surgery, Philadelphia

84: 625-784 (Nov.) 1926

*Sterilization of Infected Wounds and Chronic Ulcerations by Periarterial Sympathectomy. R. Leriche and R. Fontaine, Strasbourg, France.—p. 625.

*Intracranial Malignant Metastases. F. C. Grant, Philadelphia.—p. 635.

*Exophthalmos: Mechanism of Its Production in Exophthalmic Goiter. J. H. Tilley, Nashville, Tenn.—p. 647.

Pathogenesis of End Results of Lesions of Acute Osteomyelitis. A. O. Wilensky, New York.—p. 651.

*Surgical Treatment of Posterior Cervical Carbuncles. F. M. Livingston, New York.—p. 663.

*Symmetrical Lateral Aberrant Thyroids. R. Lewisohn, New York.—p. 675.

*Tuberculosis of Mammary Gland. B. Fox and M. A. Roblee, St. Louis.—p. 678.

*Significance of Escape of Sterile Bile into Peritoneal Cavity. O. H. Wangensteen, Minneapolis.—p. 691.

*Liver Function Studies and Their Clinical Correlations. W. R. Laird, B. F. Brugh and W. V. Wilkerson, Montgomery, W. Va.—p. 703.

Treatment of Peptic Ulcer from Surgical Point of View. G. Woolsey, New York.—p. 714.

Congenital Constriction of Duodenum Due to Abnormal Fold of Anterior Mesogastrium. R. H. Jackson, Madison, Wis.—p. 723.

*Paralytic Ileus as Complication of Acute Appendicitis. G. S. Dudley, New York.—p. 729.

*Chronic Intussusception in Children. J. F. H. Stallman, Gloucester, England.—p. 735.

Diverticulosis of Descending Colon: Seven Cases. R. M. Harbin, Rome, Ga.—p. 753.

*Fortifying Triangle in Repair of Inguinal Hernia. W. L. Keller, Washington, D. C.—p. 756.

*Gluteal Aneurysm. D. L. Maguire, Charleston, S. C.—p. 760.

Kienboeck's Disease of Semilunar Bone. R. C. Webb, Minneapolis.—p. 763.

Sterilization of Infected Wounds by Periarterial Sympathectomy.—Having noted in experiments that sympathectomy is followed by an absolute sterilization of chronically infected wounds, it being understood, of course, that these wounds are not in contact with foci of osteitis or that they do not contain foreign bodies, Leriche and Fontaine have made use of the procedure to good effect in the treatment of ulcerations which had previously been treated by antisyphilitic medications, and which did not depend on underlying varicose veins. There had been a question only of ulcers consecutive to burns, traumas or phlebitis.

Intracranial Malignant Metastases.—An experience with an intracranial metastatic lesion from an unrecognized primary cancer of the lung, led Grant to make a review of similar cases to determine how effective surgery has been in the handling of malignant metastases to the brain. He analyzes forty-nine cases diagnosed as having a metastatic intracranial lesion, twenty-six of them having been verified at operation or necropsy. Among the twenty-three histologically unverified cases, the nature of the primary focus or of its glandular metastases had been assured in all but three instances. In these unverified cases, the clinical symptoms pointed so definitely to an intracranial metastasis that in most cases surgical intervention was not recommended. Carcinoma (thirty-six cases) occurred almost twice as frequently as sarcoma (thirteen cases), and in fifteen of the carcinomas, the primary focus was in the breast. In the sarcoma group, the melanotic (seven cases) and hypernephromata types (four cases) predominate. That neither radical nor palliative surgery is of any permanent avail under these conditions, is certain. The average length of life from the time of admission to the hospital to death in both verified and unverified cases, whether operated or nonoperated, or whether radical extirpation or palliative decompression was performed, was less than four months. Grant says that a suddenly developing psychosis, when a history of a primary malignant focus is present, is extremely suggestive of metastases to the brain. Surgery, whether radical or palliative, is not of ultimate benefit to these patients as far as prolongation of life is concerned. But surgical intervention for the relief of intracranial pressure is frequently indicated, and it may go far toward relieving suffering in the last few months of life.

Mechanism of Production of Exophthalmos.—Tilley concludes that diminution of the effective restraining action of the eyelids is an important factor in the mechanism of the production of exophthalmos.

Surgical Treatment of Carbuncles.—The importance of two principles in the surgical treatment of carbuncles is stressed by Livingston: (*a*) rest through immobilization, and (*b*) plastic operation. Complete fixation of the neck is obtained through the use of a simple plaster of paris splint. The plastic operation consists of a double crucial incision with the formation of two sliding lateral flaps, planned to cover completely the denuded area caused by the loss of necrotic tissue. This operation is said to minimize the cervical deformity, and in favorable cases results in a scar consisting of straight lines. Through utilizing these principles, the tedious process of dermatization is obviated. These procedures reduce the time of treatment of carbuncles by from 50 to 75 per cent over present surgical or nonsurgical methods.

Aberrant Thyroids.—Lewisohn records a case of symmetrical bilateral aberrant thyroids situated on each side under the angle of the jaw. One gland became abscessed. The abscess was incised and later the mass was removed. It proved to be a thyroid adenoma. The patient would not consent to removal of the tumor on the opposite side.

Tuberculosis of Mammary Gland.—Fox and Roblee report six cases, and review briefly 183 cases already on record.

Significance of Escape of Sterile Bile into Peritoneal Cavity.—Wangensteen shows experimentally that the leakage of sterile bile into the peritoneal cavity is not innocuous. The experimental animal dies of cholemia as a result of the toxic action of the bile salts within a short time, when well functioning biliary fistulas from which bile escapes into the peritoneal cavity are established. The literature shows that the escape of any considerable amount of sterile bile into the peritoneal cavity of man following subcutaneous rupture of the normal bile passages, unless removed, is always fatal. In such an event instances of recovery, without removal of the bile by operation or puncture, have not been recorded. The cause of death is cholemia. The loss of bile from the intestinal tract is a contributing factor, but at the same time it probably also accounts for the delayed death in untreated cases, through a diminution of bile salt production when bile fails to reach the intestine. The more rapid death in the dog following the extravasation of bile lies partially in the explanation that dog bile is largely the more toxic taurocholic acid, whereas human bile contains relatively more of the less toxic glycocholic acid.

Liver Function Studies.—A critical study was made by Laird, Brugh and Wilkerson of fifty-two consecutive cases of gallbladder disease. They believe that the employment of functional studies has distinct value in handling the so-called cholecystitis cases. These studies are of value in differential

diagnosis, because patients who show symptoms suggesting noncalculous cholecystitis, but who give normal reactions in the liver function studies, have generally been found to be suffering from some nonhepatic disorder. On the other hand, patients in whom functional studies have pointed to definite dysfunction of the liver have almost invariably been found at operation to have definite pathologic changes of the liver associated with involvement of the gallbladder. From the clinical history, physical observations and the results of laboratory examinations, the authors have been able to predict, with reasonable accuracy, the extent of liver disease to be found at operation. In only two cases of the fifty-two, predictions were not confirmed at operation.

Paralytic Ileus Complicating Acute Appendicitis.—Dudley asserts that intestinal obstruction of the paralytic type accounts for about 40 per cent of the deaths following operation for acute appendicitis in the presence of diffuse peritonitis, and that it is one of the most serious complications with which we have to deal. Adequate external drainage of the intestinal toxin, by means of jejunostomy, appears to be the most efficient means of combating its toxemia.

Chronic Intussusception in Children.—Stallman criticizes the term chronic intussusception, because it is in reality a "permanent" intussusception, representing the sum total of the undiagnosed previous attacks of intussusception whereby a transitory tumor has become a permanent one. He points out that the recognition of its real nature may be so delayed that the life of the patient is lost. Nine cases are reported.

Improved Herniotomy.—Keller pleads for the use of two additional sutures to eliminate tension in the repair of inguinal hernia. The cord is lifted from its bed as in the Bassini operation, and the lowest suture passes through the lower limit of the insertion of Poupart's ligament, the conjoined tendon and edge of the rectus, if necessary. The second suture is passed in a similar manner, but higher. Both sutures are inserted directly in front of the pubic bone but not immediately above, and they are tied sufficiently tight to straighten out the arching fibers, thus permitting easy approximation of tissues without undue tension when the final sutures are applied in the inguinal triangle, especially in the area between the deep epigastric artery and the pubic bone, which is the weak point in direct hernia.

Gluteal Aneurysm.—In this case, Maguire placed two ligatures of chromic catgut around the left internal iliac artery and securely tied them. The posterior peritoneum was sutured over the artery with plain catgut number 0. The abdomen was closed in the usual way. Next, an obliterative endo-aneurysmorrhaphy, as described by Matas, was done. The patient made a complete recovery. Apparently, a perfect collateral circulation was established.

Boston Medical and Surgical Journal

195: 929-970 (Nov. 11) 1926

*Cesarean Section After Death of Mother. M. F. Fallon, Worcester, Mass.—p. 929.
Iodine Hypersensitization. S. H. Clifford, Boston.—p. 931.
Acute Cholecystitis, Cholelithiasis and Appendicitis in Child Aged 11 Years. H. C. Clifton, Hartford, Conn., and B. B. Landry, Boston.—p. 932.

Cesarean Section After Death of Mother.—Fallon reports two cases of cesarean section after the death of the mother with survival of the two children. The paper deals briefly with the advisability and method of doing such a cesarean section on a dead woman when the child is viable. It also quotes opinions from authoritative lawyers concerning the possible civil or criminal responsibility of the physician performing a postmortem cesarean section.

195: 971-1014 (Nov. 18) 1926

Etiology and Pathology of Peptic Ulcer. C. L. Connor, Boston.—p. 971.
Diagnosis of Peptic Ulcer by Roentgen Ray. E. L. Davis, Springfield, Mass.—p. 977.
General Management of Peptic Ulcer. F. H. Lahey, Boston.—p. 980.
*Medical Aspects of Peptic Ulcer. F. W. White, Boston.—p. 983.
General Résumé of Peptic Ulcer. C. H. Mayo, Rochester, Minn.—p. 988.
What the State is Doing for Cancer. G. H. Bigelow, Boston.—p. 996.

Medical Aspects of Gastric Ulcer.—Does the patient with a peptic ulcer ever get well under medical treatment, or is he wasting his time and money? White feels sure that he often does get well. Two hundred and six ulcer cases, 152 duodenal and fifty-four gastric ulcers were followed for from three to five years or more. Of the first group, 57 per cent are well and 21 per cent are better. Of the second group, 30 per cent are well and 24 per cent are better. The cases include many of the earlier, milder type of ulcer, and painstaking care has been taken in the medical treatment in periods of remission and in the education of the patient. Operation was performed in 18 per cent of cases of duodenal ulcers and in 42 per cent of gastric ulcers. There were no deaths among the patients with duodenal ulcer under medical treatment. Two patients (4 per cent) with gastric ulcer died, one of cancer developing in a large inoperable ulcer in an elderly man with a bad heart, and one of a complicating diverticulitis of the sigmoid.

California and Western Medicine, San Francisco

25: 577-704 (Nov.) 1926

*Acute Leukemia and Agranulocytic Angina Associated with or Following Removal of Teeth. H. P. Hill, San Francisco.—p. 609.
*Cause of Acute Appendicitis; Hydromechanics in Acute Appendicitis. C. Van Zwalenburg, Riverside, Calif.—p. 612.
*Enlarged Thyroids in University of California Women Students. R. Cunningham, Berkeley, Calif.—p. 617.
Modern Management of Exophthalmic Goiter. J. deJ. Pemberton, Rochester, Minn.—p. 619.
Value of Dark Field Microscopy in Differential Diagnosis of Secondary Syphilis. H. J. Templeton, Oakland, Calif.—p. 623.
What Medical Corps of Navy Offers Medical Man. J. G. Smith, Salt Lake City.—p. 624.
*Chronic Arthritis: Treatment with Emetine. L. W. Ely, San Francisco. —p. 625.
Diabetes in Children. F. S. Smyth, San Francisco.—p. 629.
Living Trichinella Thirteen Years Old. N. Miller, Salt Lake City.—p. 633.
Thyroglossal Tract Cysts. J. H. Shephard, San Jose, Calif.—p. 635.
*Use of Theobromine for Pain of Arteriosclerotic Origin. W. Dock, Altadena, Calif.—p. 636.
Acute Intestinal Obstruction. S. Floersheim, Los Angeles.—p. 639.

Association of Mouth Infections, Extracted Teeth and Leukemia.—Hill reports a case that presented evidence of direct association of certain mouth infections with the extraction of teeth. One blood relative had died of pernicious anemia. In the preceding years, the patient's complaints had been principally gastro-intestinal, and had been due to gallstones. At these times he had complained of feeling "toxic." A roentgen-ray examination of his teeth disclosed apical abscesses of two inferior left molars. Because the patient considered that the teeth might have some influence on the "toxic" spells, the dentist finally persuaded him to have them extracted. This was done. The extraction was not difficult. Three days after, he felt ill, with chilly sensation, prostration and temperature. There was some swelling and tenderness of the left submaxillary glands. The area of teeth extraction was swollen and bluish, and did not show any tendency to heal. A bloody purulent discharge was present. Physical examination was otherwise negative. There was neither general adenopathy nor splenic enlargement. The patient was decidedly toxic. The leukocyte count was 90,000. The urine had a trace of albumin. On the following day, the leukocytes numbered 102,000. Of these, 99 per cent were mononuclear cells and 1 per cent were polymorphonuclear cells. The number of leukocytes progressively increased to 366,000, with mononuclear cells nearly 100 per cent. The clinical course of the disease was marked by a profound toxemia, fever, prostration and delirium. The tissue in the region of the extracted teeth became gangrenous with a foul-smelling discharge. A purpuric rash developed over the body and extremities, and anemia was marked. General adenopathy was never present nor was the spleen palpable. A terminal bronchopneumonia developed. The blood culture was negative. Death occurred after nine days' illness, and a complete necropsy was made. The clinical and pathologic diagnosis was acute leukemia, myelogenic. A second case is cited with a similar sequence of events. A third patient had sciatica. Two impacted molars were removed with considerable difficulty. Six days following the extraction, a hemorrhage occurred from the right tooth socket, and this was followed by an increasing complaint of soreness of the neck and of some difficulty in swallowing. Three days after, there was a rise in temperature to 100 F. The leukocyte

count was 2,000. The disease ran a toxic course. The total leukocyte count progressively dropped to 200 cells. Smears from the teeth cavities and tonsils showed the organisms of Vincent's angina mixed with numerous streptococci. Death occurred fifteen days after the onset of the fever, and twenty-five days following the extraction of the teeth. The diagnosis was agranulocytic angina.

Etiology of Appendicitis.—Van Zwalenburg states that the way to curtail the mortality from appendicitis is to teach all men, lay as well as medical, that the etiology of appendicitis is not a matter of diet, occupation or exercise, constipation or diarrhea, grip or tonsillitis, but that it depends on the practically accidental conformation of that organ in each person. The acute attack means a mechanical obstruction with strangulation, and immediate removal is the royal road to the annihilation of appendix mortality.

Enlarged Thyroids Among Women Students.—Among 7,320 women students entering the University of California during the last five years, 1,361, or 18.6 per cent, had enlargement of the thyroid. Cunningham has analyzed 500 of these cases to determine the incidence of thyroid enlargements on the Pacific Coast. California was wholly or in part responsible for only slightly more than half of the enlarged thyroids.

Emetine Treatment of Arthritis.—The form of arthritis which Ely considers most likely to respond to the emetine treatment is osteoarthritis, hypertrophic arthritis deformans or degenerative arthritis, as it is generally known. The full treatment is a course of emetine hydrochloride, interspersed with three doses of neoarsphenamine, and followed by a course of emetine bismuth iodide. Usually twelve daily injections of 1 grain (0.065 Gm.) of the emetine hydrochloride are given, followed by 3 grains (0.2 Gm.) of emetine bismuth iodide daily for ten days. The neoarsphenamine is given weekly, beginning with a dose of 0.45 Gm. The second dose is 0.6 Gm., the third, 0.9 in men and 0.6 in women. During the treatment, the patient is kept on a careful diet, and he does not take cathartics. The emetine hydrochloride is usually given intravenously, though recently the plan of giving the first dose of one-half grain (0.03 Gm.) intramuscularly has been adopted. Ely warns that emetine is a dangerous drug, affecting the heart, intestine, and muscles, but, when cautiously and intelligently employed, it has a distinct value in the treatment of chronic arthritis.

Theobromine for Pain of Arteriosclerotic Origin.—Dock's experience with theobromine is about what could be predicted from the nature of the underlying pathologic changes. In most of the cases of angina, relief was not obtained, but in an important minority, relief was immediate and complete. The patients who improved were usually those with frequent, sometimes very severe, pain, moderate sclerosis of palpable vessels, but without other demonstrable circulatory disease. Two were men of about 50, with a history of years of immoderate smoking. In one patient, attacks which had been occurring once or twice daily for months disappeared for almost a year, recurring whenever the drug was omitted. A coronary occlusion then developed, and he died after eight months of heart failure without pain. A parietal aneurysm of the left ventricle was found at necropsy. Theobromine sodiosalicylate, in from 7 to 10 grain (0.5 to 0.65 Gm.) doses, can be given conveniently three times daily, in solution or in capsules. If decided benefit is not noted in three or four days, further administration is useless. When the attacks are inhibited by the drug, it can be continued indefinitely, and the dose can be decreased and discontinued from time to time to see whether pain recurs. Patients with angina pectoris or intermittent claudication should not be considered intractable or be subjected to operation until theobromine has been tried.

Georgia Medical Association Journal, Atlanta

15: 415-452 (Nov.) 1926

Modern Conceptions of Infectivity. P. Eaton, Augusta.—p. 415.
*Use of Dextrose for Children and Pleasant Method of Administration. W. L. Funkhouser, Atlanta.—p. 420.
Basal Metabolic Rate in Toxic Goiter. T. C. Davison and H. M. Davison, Atlanta.—p. 424.
Creeping Eruption (Larva Migrans). W. H. Hailey, Atlanta.—p. 428.
*Acromegaly with Hypothyreosis and Diabetes Mellitus. J. A. Hunnicutt, Jr., and A. A. Rayle, Athens.—p. 429.
Congenital Pyloric Stenosis. R. L. Rhodes, Augusta.—p. 433.
"Diverticulitis" from Surgeon's Standpoint. W. W. Battey, Augusta.—p. 435.
*Urethral Calculi in Children. W. L. Bazemore, Macon.—p. 437.
Chloretone per Rectum in Postoperative Cases. T. C. Davison, Atlanta.—p. 443.

The Dextrose Lollypop.—Funkhouser administers dextrose to children in the form of a lollypop. Into each 3 pounds of dextrose, one-fourth ounce of orange oil is incorporated. A pound of dextrose will make a pound of candy. Therefore, the weight of the lollypop, minus the weight of the stick, represents the number of grains of dextrose administered.

Acromegaly and Diabetes.—Hunnicutt and Rayle relate the case of a woman, aged 43, who presented marked symptoms of acromegaly and early symptoms of myxedema. She suddenly developed polyuria and thirst, and died in diabetic coma after a week's illness.

Urethral Calculi in Children.—Bazemore reports five cases of urethral calculi in children under 10, which he believes were secondary calculi; that is, stones obstructed within the urethra, having their origin within the bladder or upper urinary tract.

Iowa State Medical Society Journal, Des Moines

16: 479-518 (Nov.) 1926

*Correlation of Findings in Cardiovascular Disease. P. D. White, H. B. Sprague and T. D. Jones, Boston.—p. 479.
Hypodermoclysis. D. M. Blum, Des Moines.—p. 486.
Influenzal Meningitis. M. L. Turner, Des Moines.—p. 490.
American Psychiatric Association Corrected Final Report, June 10, 1926. K. A. Menninger, Topeka, Kan.—p. 491.
Health Examinations. T. J. Edmonds, Des Moines.—p. 496.
Syphilis in Pregnancy and Its Treatment. R. E. Jameson, Davenport.—p. 498.

Diagnosis of Cardiovascular Disease.—A study has been made by White et al. of the correlation of pathologic and clinical data of cardiovascular disease in 297 cases (out of 775) coming to necropsy, to determine the ability to diagnose pathologic conditions. They conclude that on the whole, with certain exceptions, notably chronic adherent pericarditis and uncomplicated syphilitic aortitis, ability to diagnose cardiac disease depends on the extent of the disease. Thus, very slight cardiac enlargement, slight aortic and coronary sclerosis, slight nondeforming valvular disease and slight terminal acute pericarditis are practically always missed and are probably not diagnosable. In difficult cases, roentgenray measurements may be necessary to make the diagnosis. A moribund state and careless hasty examinations are the chief causes of error.

Journal of Bacteriology, Baltimore

12: 303-383 (Nov.) 1926

Relation Between Chemical Constitution and Germicidal Activity of Monohydric Alcohols and Phenols. F. W. Tilley and J. M. Schaffer, Washington, D. C.—p. 303.
Concentration of Sea Water as Affecting Its Bacterial Population. C. B. Lipman, Berkeley, Calif.—p. 311.
Bacterial Flora of Serpentine Soils. C. B. Lipman, Berkeley, Calif.—p. 315.
Study of Formation of Volatile Sulphur Compounds by Bacteria. L. H. Almy and L. H. James, Washington, D. C.—p. 319.
Butter Aroma Bacteria. S. Orla-Jensen, A. D. Orla-Jensen and B. Spur, Copenhagen.—p. 333.
Physiologic Studies of Association. J. R. Sanborn, Amherst, Mass.—p. 343.
Relation Between Complement Fixation and Skin Reactive Antigens of Tubercle Bacillus. B. Abadjieff, Boston.—p. 355.
Causative Factor of "Floaters" During Curing of Olives. R. S. Alvarez, Berkeley, Calif.—p. 359.
*Bacteria in Muscular Tissues and Blood of Apparently Normal Animals. A. F. Reith, Chicago.—p. 367.

Bacteria in Blood and Tissues of Normal Animals.—Reith says that cultures of the muscular tissues of slaughtered hogs showed the presence of bacteria in 77 per cent of 216 samples examined; 37 per cent of the samples contained anaerobes. Cultures of the muscular tissues of healthy live hogs, rabbits and guinea-pigs showed the presence of bacteria in 83 per cent of 108 samples examined; 49 per cent of the samples contained anaerobes. Cultures of the blood of healthy live hogs, rabbits and guinea-pigs showed the presence of bacteria

in 84 per cent of thirty-eight samples examined; 39 per cent of the samples contained anaerobes. A brief period of starvation of hogs (from thirty-six to forty hours) did not have an appreciable effect on the presence of bacteria in the blood, or on the types of bacteria found.

Journal of Biological Chemistry, Baltimore

70: 599-828 (Nov.) 1926

*Sugar Determination. M. Somogyi, St. Louis.—p. 599.
Soluble Specific Substance of Pneumococcus: IV. Nature of Specific Polysaccharide of Type III Pneumococcus. M. Heidelberger and W. F. Goebel, New York.—p. 613.
Liver Amylase and Probable Rôle in Regulation of Blood Sugar. H. A. Davenport, St. Louis.—p. 625.
Effect of Hydrogen Ion Concentration on Rate of Destruction of Vitamin B on Heating. H. C. Sherman and G. W. Burton, New York.—p. 639.
*Effect of Cod Liver Oil on Thyroparathyroidectomized Dogs. J. H. Jones, Philadelphia.—p. 647.
Alcaptonuria in Rabbit. J. H. Lewis, Chicago.—p. 659.
Chemical Investigations of Corpus Luteum: VI. Lipoids of Ether Extracts. M. C. Hart and F. W. Heyl, Kalamazoo, Ind.—p. 663.
*Id.: VII. Cephalin Fraction. M. C. Hart and F. W. Heyl, Kalamazoo, Ind.—p. 675.
*Synthesis of Amino-Acids in Animal Body: IV. Synthesis of Histidine. B. Harrow and C. P. Sherwin, New York.—p. 683.
Basic Proteins: I. Nitrogen Distribution and Percentages of Some Amino-Acids in Protamine of Sardine, Sardinia Cerulea. M. S. Dunn, Los Angeles.—p. 697.
Determination of Hydrogen Ions in Blood with Aid of Duboscq Colorimeter and Ortho-Chrom-T or Para-Nitrophenol. J. F. McClendon, S. Russell and E. Tracy, Minneapolis.—p. 705.
Hydrolysis of Cornstarch by Commercial Pancreatin. J. H. Walton and H. R. Dittmar, Madison.—p. 713.
Colorimetric Determination of Hydrogen Ion Concentration of Milk, Whey and Cream. P. F. Sharp and T. J. McInerney, Ithaca.—p. 729.
Sodium Deficiency in Corn Ration. H. G. Miller, Corvallis, Ore.—p. 759.
Metabolism of Hydantoins and Hydantoic Acids. O. H. Gaebler and A. K. Keltch, Iowa City.—p. 763.
Distribution of Chloride and Protein Between Plasma and Synovial Fluid. F. Fremont-Smith and M. E. Dailey, Boston.—p. 779.
Significance of Cyanic Acid in Urea-Urease System. Color Test for Cyanic Acid. W. R. Fearon, Dublin, Ireland.—p. 785.
Glutathione Content of Normal Animals. J. W. Thompson and C. Voegtlin, Washington, D. C.—p. 793.
Glutathione Content of Tumor Animals. C. Voegtlin and J. W. Thompson, Washington, D. C.—p. 801.

Sugar Determination.—A modification of the Shaffer-Hartmann carbonate-tartrate copper reagent is offered by Somogyi, which has a more constant degree of alkalinity, gives higher reduction values and extends the usefulness of the method to lower concentrations of glucose. An adaptation of the Shaffer-Hartmann method for 0.2 cc. of blood is described.

Effect of Cod Liver Oil on Thyroparathyroidectomized Dogs.—Jones avers that the daily administration of 20 cc. of cod liver oil for two weeks before operation prevented tetany, and greatly increased the length of life of thyroparathyroidectomized dogs. However 20 cc. a day of the oil, if given only after the removal of the glands, was not effective in preventing tetany or in prolonging the life of the animals. The concentration of calcium in the blood of the treated animals fell as rapidly as that of the untreated animals; in fact, the lowest levels attained were in the blood of the treated dogs which lived the longest. These data indicate that some factor in addition to the low concentration of serum calcium plays a part in the production of the tetany which usually follows, within two or three days, the removal of the parathyroid glands. Similar results, but not as striking, were obtained by irradiating the dogs with ultraviolet rays before the removal of the glands.

Nature of Corpus Luteum Fraction.—Systematic fractionation and analyses of the cephalin fraction from corpus luteum made by Hart and Heyl indicate that it is similar to the same fraction from the heart, liver, and brains, as it is composed of a little lecithin and cephalin, together with fragments of these lipoids.

Value of Histidine in Diet.—The importance of histidine in the diet is conclusively demonstrated by Harrow and Sherwin. Imidazol pyruvic acid is able, to some extent, to replace histidine in the diet; but imidazol lactic acid is much more efficient in this capacity, while imidazol acrylic acid is less so. Imidazol alone is valueless when used with a histidine-free diet. The probable metabolism of histidine in the body is discussed.

Journal of Experimental Medicine, Baltimore

44: 581-734 (Nov.) 1926

Susceptibility of Rabbits to Infection by Inhalation of Virulent Pneumococci. E. G. Stillman and A. Branch, New York.—p. 581.
Experimental Syphilis: VI. Variations in Response of Treated Rabbits to Reinoculation; and Cryptogenetic Reinfection with Syphilis. A. M. Chesney and J. E. Kemp, Baltimore.—p. 589.
Bacteriophage of d'Hérelle: VI. Virulence of Overgrowth in Lysed Cultures of Bacillus Pestis Caviae. (M. T. II.) J. Bronfenbrenner, R. S. Muckenfuss and C. Korb, New York.—p. 607.
*Survival of Tubercle Bacillus in Suspension in Physiologic Sodium Chloride Solution. R. E. Shope, New York.—p. 623.
Behavior in Vivo of Certain Relatively Pure Antigens. F. S. Jones, Princeton, N. J.—p. 625.
Relation Between Body and Organ Weights in Rabbits. W. H. Brown, L. Pearce and C. M. Van Allen, New York.—p. 635.
Occurrence and Trend of Spontaneous Variations in Organ Weights of Normal Rabbits. W. H. Brown, L. Pearce and C. M. Van Allen, New York.—p. 653.
*Agglutination: III. Mechanism of Agglutination of Bacteria by Specific Agglutinating Serum. G. S. Shibley, New York.—p. 667.
Immunologic Relationships of Encapsulated and Capsule-Free Strains of Eacapsulatus Pneumoniae (Friedländer's Bacillus). L. A. Julianelle, New York.—p. 683.
*Etiology of Oroya Fever: III. Bartonella Bacilliformis. H. Noguchi, New York.—p. 697.
*Id.: IV. Effect of Inoculation of Anthropoid Apes with Bartonella Bacilliformis. H. Noguchi, New York.—p. 715.
*Id.: V. Experimental Transmission of Bartonella Bacilliformis by Ticks (Dermacentor Andersoni). H. Noguchi, New York.—p. 729.

Resistance of Tubercle Bacillus.—Three suspensions of tubercle bacilli in physiologic sodium chloride solution were still virulent for guinea-pigs after 310, 325 and 330 days at refrigerator temperature. Shope says that one of these cultures, on which recent tests had been made, had lost very little, if any, of its virulence for guinea-pigs in 325 days.

Nature of Specific Bacterial Agglutination.—Evidence presented by Shibley is interpreted as showing that specific bacterial agglutination may be conceived of as follows: When bacteria are mixed with their homologous agglutinative serums, specific union between the organism and agglutinin occurs. This interaction consists of specific coating of the bacteria by globulin. By virtue of the fact, noted by Loeb, that protein film formation gives the coated particle the characteristics of denatured protein, the bacteria now take on the character of particles of denatured globulin. Particles of denatured protein flocculate whenever their charge is reduced by electrolyte to a critical level lying somewhere between 12 and 14 millivolts. This is true even when the salt is strong, as, unlike bacterial particles, their cohesive force is not readily depressed by salt. The sensitized bacteria, now being essentially particles of denatured protein, likewise agglutinate as soon as their charge is reduced by the electrolyte to this potential level.

Etiology of Oroya Fever.—The striking fact brought out by Noguchi's study is the variety of responses to inoculation which animals of the same species may manifest. The clinical features of the infection may be typical of Oroya fever or may resemble those of verruga peruviana, and in one monkey, a type of infection resulted in which the characteristic phenomena of both conditions were simultaneously present. Whether the appearances will resemble those of the one or the other condition seems to depend on the susceptibility of the individual as well as on the virulence of the organism. Moreover, it seems probable that different degrees of resistance to the invasion of the parasite on the part of the blood cells, internal organs or skin of a given animal may determine the predominant clinical manifestations of the infection. The factor of variation in susceptibility of different persons or different tissues of the same person would account for the variety of types of human *Bartonella* infection.

Experimental Oroya Fever.—Noguchi says that the symptoms and lesions observed in the chimpanzee and orang-utan as a result of infection with *Bartonella bacilliformis* are far milder than those of *M. rhesus* monkeys, and show less resemblance to human Oroya fever or verruga.

Id.—Experiments are reported by Noguchi in which *Bartonella bacilliformis* was transmitted from infected to normal

M. rhesus monkeys by the bite of the tick, *Dermacentor andersoni*. A long period of feeding, both on the infected animal and on the normal animal subjected to infection, was required in order to secure positive results. The infection transmitted by the ticks was mild, but definite, as shown by the recovery of *Bartonella bacilliformis* from the lymph nodes and blood.

Journal of General Physiology, Baltimore

10:205-358 (Nov. 20) 1926

Human Growth Curve. C. B. Davenport, Cold Spring Harbor, N. Y.—p. 205.
Effect of Enzyme Purity on Kinetics of Tryptic Hydrolysis. H. B. Merrill, Milwaukee.—p. 217.
Temperature and Frequency of Heart Beat in Cockroach. E. F. B. Fries, Cambridge, Mass.—p. 227.
Physicochemical Properties of Dissociated Sponge Cells. P. S. Galtsoff and V. Pertzoff, Boston.—p. 239.
Geotropic Conduct of Young Rats. W. J. Crozier and G. Pincus, Cambridge, Mass.—p. 257.
Penetration of Basic Dye into Nitella and Valonia in Presence of Certain Acids, Buffer Mixtures and Salts. M. Irwin, New York.—p. 271.
Rôle of Certain Metallic Ions as Oxidation Catalysts. S. F. Cook, Cambridge, Mass.—p. 289.
Amphoteric Behavior of Complex Systems: I. Theoretical. A. E. Stearn, Pasadena, Calif.—p. 313.
Id.: II. Titration of Sulphanilic Acid-Glycine Mixtures. A. E. Stearn, Pasadena, Calif.—p. 325.
Physiologic Ontogeny: A. Chicken Embryos. XII. Metabolism as Function of Age. H. A. Murray, Jr., New York.—p. 337.
Regulation of Hydrogen Ion Concentration; Relation to Metabolism and Respiration in Starfish. L. Irving, Pacific Grove, Calif.—p. 345.

Journal of Immunology, Baltimore

12: 331-422 (Nov.) 1926

Microbic Heredity: IX. Biologic Origin and Physicochemical Nature of Inagglutinability with Freshly Isolated Typhoid Bacilli. R. R. Mellon and E. L. Jost, Rochester, N. Y.—p. 331.
Id.: X. Agglutinin-Absorption Reaction as Related to Newer Biology of Bacteria; Nature of Spore Formation. R. R. Mellon, Rochester, N. Y.—p. 355.
Bacterial Variation: Serologic Characters of Parent and Substrains Within Para B-Suipestifer Group. P. R. Edwards and L. F. Rettger, New Haven, Conn.—p. 377.
Bacterial Protein-Free Bacteriophage Prepared by Tryptic Digestion. L. Arnold and E. Weiss, Chicago.—p. 393.
Smooth Muscle in Anaphylactic Guinea-Pigs. Exaggerated Response to Mixtures of Sensitized Tissue and Homologous Antigens. H. L. Alexander, J. A. Holmes and W. G. Becke, St. Louis.—p. 401.
Group Specific Substances in Human Spermatozoa. K. Landsteiner and P. Levine, New York.—p. 415.
*Heparin Inhibition of Anaphylactic Shock. P. Kyes and E. R. Strauser, Chicago.—p. 419.

Heparin Inhibition of Anaphylactic Shock.—Kyes and Strauser conclude that heparin, as a reagent inhibiting fibrin formation, so markedly eliminates anaphylactic shock reactions, as to give support to the view that there is a causal relation between fibrin emboli and the symptoms of shock.

Radiology, St. Paul

7: 463-554 (Dec.) 1926

Roentgenology in Russia. I. S. Hirsch, New York.—p. 463.
*Postoperative Irradiation of Breast Cancer. J. Borak, Vienna.—p. 471.
Reduplication of Kidney Pelves and Ureters. F. L. Shumacher, Pittsburgh.—p. 475.
Roentgen Ray in Urology. J. C. Sargent, Milwaukee.—p. 480.
*Congenital Abnormalities of Stomach. D. A. Rhinehart and B. A. Rhinehart, Little Rock, Ark.—p. 492.
*Family Diverticulosis of Colon. F. W. Mackoy, Milwaukee.—p. 498.
*Diagnostic Inflation of Knee Joint. M. A. Bernstein and R. A. Arens, Chicago.—p. 500.
Radioactive Substances: Therapeutic Uses and Applications. J. Muir, New York.—p. 507.
Roentgen-Ray Findings in Large Ventral Hernia. J. E. Habbe, Norfolk, Va.—p. 511.
Nonsecretion of Tetraiodophenolphthalein. A. S. Kirkland, St. John, N. B.—p. 512.
Charging Device for Electroscope. R. B. Taft, Charleston, S. C.—p. 513.

Postoperative Irradiation of Breast Cancer.—Of the twenty-six patients receiving postoperative irradiation in 1919, Borak says that nine are still living, and are free from recurrences, six years after operation. Six patients, or 10 per cent, had died without any recognizable recurrence of cancer.

Inversion of Stomach.—The Rhinecharts report a case of complete inversion of the stomach in a woman, aged 65. The condition apparently was of developmental origin. With the patient erect, the esophagus passed through the diaphragm in the normal position. It did not deviate to the left but was directed vertically, terminating in the stomach to the left of the middle of the second lumbar vertebra. The fundus of the stomach was directed downward, its lowermost part reaching to the level of the highest point of the left iliac crest. The greater curvature of the stomach extended upward to the left arch of the diaphragm, into the under surface of which it fitted accurately. From the under surface of the diaphragm, the pyloric portion was directed toward the right and anteriorly, terminating in a normal sphincter pylori anterior to the first lumbar vertebra. The duodenal bulb was in line with the pyloric portion of the stomach and, although its distal end was downward, it retained an average quantity of the opaque meal. Uneasy sensations in the abdomen, and the fact that the patient could not eat as hearty a meal as an ordinary person are the only symptoms that could be attributed to the stomach.

Family Diverticulosis of Colon.—Eight members of a family, in three generations, suffered from a chronic intestinal trouble that presented similar clinical pictures in all cases. By roentgen-ray examination, the diagnosis of diverticulitis of the colon was established by Mackoy in two of the cases (sisters), and a symptomless diverticulosis was demonstrated in a third sister.

Diagnostic Inflation of Knee Joint.—Most knee joint derangements present a similar group of symptoms, i. e., pain, swelling or effusion, lameness, possible limitation of motion or locking. Visual examination by arthrotomy to disclose the existing pathologic condition is too formidable as a routine procedure. Bernstein and Arens assert that pneumoarthrosis (diagnostic inflation) is a valuable aid in the differential diagnosis of these derangements. It is a simple, harmless procedure that can be employed in outpatient cases.

Rhode Island Medical Journal, Providence

9: 169-184 (Nov.) 1926

Psychiatric Viewpoint. A. H. Harrington, Howard.—p. 169.
Case of Phlegmon of Upper Lip. E. G. Melvin, Providence.—p. 174.
Blood Transfusion. W. P. Davis, Providence.—p. 176.

Virginia Medical Monthly, Richmond

53: 485-556 (Nov.) 1926

A Country Surgeon. W. L. Harris, Norfolk.—p. 485.
Physician and Pharmacist. W. F. Rudd, Richmond.—p. 490.
Diseases of Middle Life; Can We Prevent Them? M. O. Burke, Richmond.—p. 492.
Surgical Management of Handicapped Toxic Goiter Patients. L. D. Keyser, Roanoke.—p. 493.
Value of History in Diagnosis of Pulmonary Tuberculosis. P. H. Neal, Catawba Sanatorium.—p. 496.
Value of Studying Renal Tracts as Aid to Diagnosis of Diseases of Abdomen. B. E. Rhudy, Abingdon.—p. 499.
Vitamins, Radiation and Rickets in Temperate Zone. S. G. T. Grinnan, Richmond.—p. 500.
Novasurol as Diuretic in Edema. W. P. Argy, Washington, D. C.—p. 504.
Correlation of Roentgen-Ray Findings and Clinical Findings. W. M. Phelps, Staunton.—p. 507.
The Treatment of Incipient Cataract. H. H. McGuire, Winchester.—p. 511.
Fracture of Skull and Unilateral Optic Atrophy. V. K. Hart, Statesville, N. C.—p. 514.
Hypoplastic Tendency in Gynecology. R. Y. Sullivan, Washington, D. C.—p. 516.
Surgical Aspect in Gynecology. G. F. Douglas, Birmingham, Ala.—p. 519.
Cancer of Stomach in Man of 73; Partial Gastrectomy Under Local Anesthesia. J. S. Horsley, Richmond.—p. 523.
Hilus Pneumonia. M. J. Payne, Staunton.—p. 525.

West Virginia Medical Journal, Charleston

22: 561-616 (Nov.) 1926

Spinal Block in Acute Cord Injury. C. C. Coleman, Richmond.—p. 561.
Acute Poliomyelitis. H. A. Walkup, Mount Hope.—p. 565.
Pelvic Varicocele. M. A. Tate, Cincinnati.—p. 572.
Heart and Cholelithiasis. A. A. Sussman and J. R. Wilkerson, Baltimore.—p. 576.
Health Survey of Sixty-Eight Cities. R. H. Edmondson, Morgantown.—p. 579.
Left Lateral Incomplete Dislocation of Axis, with Case. C. A. Latham, Huntington.—p. 584.
Psoriasis. L. G. Beinhauer, Pittsburgh.—p. 586.
Parinaud's Conjunctivitis: Case. M. L. Dillon, Charleston.—p. 587.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Disease in Childhood, London

1: 255-322 (Oct.) 1926

*Causation of Fetal Death. C. D. Tingle.—p. 255.
Congenital Atresia of Alimentary Tract. W. P. H. Sheldon.—p. 279.
Congenital Duodenal Stenosis Due to Peritoneal Bands. T. T. Higgins. —p. 285.
Day and Night Creatinine and Creatine in Urine of Infants. O. S. Rougichitch.—p. 289.
Tuberculous Dactylitis in Infancy. G. Herzfeld and M. C. Tod.—p. 295.
Ketonemia and Ketonuria in Childhood. M. J. Brown and G. Graham. —p. 302.

Cause of Fetal Death.—The causation of fetal and neonatal deaths was investigated by Tingle in a series of 160 cases. He found that more fetuses die as the result of excessive trauma during delivery than from maternal or fetal disease. The fatal results of excessive trauma are due to hemorrhage. Certain maternal morbid states predispose to fetal injury during delivery. Factors predisposing to hemorrhage are prematurity, excessive venous congestion and the hemorrhagic diathesis. Pneumonia is the most common infection causing neonatal death.

British Journal of Dermatology and Syphilis, London

38: 425-474 (Nov.) 1926

*Urticarial Reaction; Physiologic Meaning. R. T. Grant.—p. 425.
Etiology of Urticaria. J. G. Tomkinson.—p. 431.
Urticaria Factitia. P. B. Mumford.—p. 444.

Meaning of Urticarial Lesion.—Grant states that the urticarial lesion may be regarded as the expression of a general mechanism of defense in the skin against injuries of all kinds. It is the result of purely physiologic processes, and attracts especial attention in susceptible subjects because of the relatively mild grade of injury required to liberate the substance concerned.

British Medical Journal, London

2: 815-864 (Nov. 6) 1926

Significance of Anatomy. G. E. Smith.—p. 815.
Malignant Disease of Upper Air and Food Passages: I. Surgical Treatment. F. J. Steward.—p. 819.
Id.: II. Treatment by Roentgen Rays. R. Knox.—p. 821.
Id.: III. Treatment by Radium. W. Milligan.—p. 822.
Id.: IV. Treatment by Diathermy. W. S. Syme.—p. 825.
Nontuberculous Coxitis in Young. H. A. T. Fairbank.—p. 828.
*Osteo-Arthritis of Hip Joint Treated by Vaccines. H. W. Crowe.—p. 834.
*Pulmonary Embolism Following Childbirth. Thos. McCulloch.—p. 835.
Id.: W. J. Young.—p. 835.
Pyloric Stenosis in Brothers. J. W. Heekes.—p. 835.
Herpes and Varicella. E. W. Matthews.—p. 835.
Strangulated Hernia in Infant. J. O. Fitzsimmons.—p. 836.

Vaccine Therapy of Ostearthritis of Hip Joint.—Crowe asserts that ostearthritis of the hip joint is curable by means of vaccine, and that in successful cases patients can resume a full and active existence circumscribed only by the amount of bony changes. These are to be regarded as the results of the disease, and not as the disease itself. The bony changes are not the cause of the pain. Ten cases are cited as examples of very definite improvement or complete cure in osteartritis mainly confined to the hip joint. Of all cases treated, rather more than 50 per cent gave similar results. The chief vaccine used was made from streptococci obtained from foci of infection.

Pulmonary Embolism Following Childbirth.—Five days after delivery, McCulloch's patient complained of pain in the left thigh. Many of the superficial veins were thrombosed. After many weeks the patient apparently was quite well when suddenly symptoms of pulmonary embolism were manifested. The patient recovered from this complication.

China Medical Journal, Shanghai

40: 937-1058 (Oct.) 1926

*Prevalence of Malaria in China. E. C. Faust.—p. 937.
Tendencies of Medical Education. H. S. Houghton.—p. 956.
Treatment of Congenital Hypertrophic Stenosis of Pylorus. B. Muir. —p. 969.
Contraception, or Birth Control. J. G. Cormack.—p. 973.
Contraception. J. P. Maxwell.—p. 986.
Laws of Variation and Heredity. A. B. D. Fortuyn.—p. 995.
Severe Case of Pernicious Anemia. W. T. Fu and S. D. Sturton.—p. 1016.
Spinal Anesthesia by Stovaine. R. B. Coleman.—p. 1019.

Prevalence of Malaria in China.—Faust says that the symptoms of clinical malaria (ague) were recorded in the Chinese medical annals, the Neiching, as far back as 2600 B. C., and the three types of the disease were recognized. Many remedies were prescribed for malaria in the Chinese Herbal, including several tonics, of which arsenic was one. Yet the avidity with which the population has taken to the use of quinine, unknown before the introduction of western medicine, indicates that the native preparations were not highly successful. For several decades there has been abundant direct evidence of the heavy endemicity and epidemicity of malaria of the three known types in the Yangtze valley and the more southern parts of China, while the disease in the north has been much less prevalent and its expression much more benign, with only occasional epidemics which have been due to unusual climatic conditions, such as floods. Malaria as a serious problem in China may be said to involve practically all the Yangtze valley, the southeast coastal provinces, and the regions of the southern boundary adjacent to Tonkin and Burma. In addition, the focus in the Amur basin deserves special attention, since it lies far to the north and is separated by wide expanses from other heavy centers of infection. All of these heavy endemic centers serve as reservoir localities from which the disease is disseminated into adjacent areas, particularly when large bodies of troops have been moved about, as in recent years. Likewise, travel on the part of infected students, business men and coolie laborers also tends to spread the infection.

"Gann," Japanese Journal of Cancer Research, Tokyo

20: 37-50 (Oct.) 1926

Studies on Experimentally Produced Carcinoma. K. Nakamura.—p. 37.
Investigations of Filtrability of Chicken Sarcoma Virus by Means of Ultrafiltration. K. Ono.—p. 42.
*Relation of Carcinoma to Arteriosclerosis. K. Suzue.—p. 46.

Relation of Carcinoma to Arteriosclerosis.—Suzue studied the relation of arteriosclerosis to carcinoma in 525 cases coming to necropsy, basing results on the condition of the aorta and coronary arteries. In ninety-nine cases, these vessels were entirely normal; in 105 cases, they were slightly involved; 174 cases exhibited a slight grade of arteriosclerosis, 102, a moderate grade, and forty-five a severe grade of arteriosclerosis. The largest number of cases (434) occurred in persons between the ages of 30 and 60. Of 2,018 noncarcinoma cases, 568 did not show evidence of arteriosclerosis, 566 showed a few spots, 481, a slight grade, 268, a moderate grade and 135, a severe grade of arteriosclerosis. There were 1,211 patients between the ages of 30 and 60. Apparently there is a stronger correlation between age and arteriosclerosis than between carcinoma and arteriosclerosis.

Irish Journal of Medical Science, Dublin

6: 617-664 (Nov.) 1926

Maternity Service for Tuberculous Women. A. Couvelaire.—p. 621.
Radium Treatment of Middle Ear Deafness: Effect on Chronic Hyperplastic Otitis Media. W. C. Stevenson and T. G. Wilson.—p. 630.
*Aneurysm of Thoracic Aorta. J. Speares, R. V. Murphy and C. C. Mecredy.—p. 635.
Glimpse at Some French Spas. M. F. O'Hea.—p. 638.
Hair-Ball of Stomach (Trichobezoar.) W. Doolin.—p. 641.

Aneurysm of Thoracic Aorta.—Among 600 heart cases, forty-one cases of aneurysm of the thoracic aorta were noted. These cases are analyzed by Spears et al. The Wassermann test was carried out in thirty-one cases; in fifteen, the reaction was negative on repeated tests, and in sixteen, it was positive. There was a definite history of rheumatism in eight cases. In twenty-three cases, the heart was found clinically to be enlarged; this observation was confirmed by roentgen-ray examination. In two of the cases which came to post-mortem examination, there were small hearts. Roentgen-ray reports pronounced thirty-three cases to be aneurysms of the arch, in four, of the descending aorta; the position was not given in four cases. In thirteen cases, the aneurysms were stated to project to the left, and in four, to the right. The

electrocardiograms did not demonstrate a definite abnormality in most of the cases, but mild heart block or preponderance of the left ventricle was shown in eight. In approximately ten cases, clinical signs suggestive of aneurysm were not present; the diagnosis was determined in these cases by roentgen-ray observations, and confirmed by a second roentgen-ray examination. The authors emphasize the importance of roentgen-ray examination as a method of diagnosis, especially in chest cases.

Journal of Cancer, Dublin

3: 1-42 (April-June) 1926

Treatment of Malignant Disease by Radium and Deep Roentgen Ray. A. Charles.—p. 1.
Treatment of Malignant Growth by Combination of Deep Roentgen-Ray Therapy with Diathermy. W. Pilger.—p. 12.
Study of Rous Chicken Sarcoma No. I. T. J. Glover, M. J. Scott, J. Loudon and J. M. McCormack.—p. 18.

3: 1-42 (July-Sept.) 1926

Malignant Disease and Biologic Immunization Therapy. W. Schmidt. —p. 1.
Cancer and Public Health. A. Charles.—p. 24.

3: 1-43 (Oct.-Dec.) 1926

Nerve Factor in Relation to Cancer. C. Hickey.—p. 1.
Pathologic Currents and Cancer. H. Byrd.—p. 13.
Radon (Radium Emanation) as Palliative Agent in Treatment of Intra-Oral Cancer. F. E. Simpson and R. E. Flesher.—p. 18.
Cancer and Neuronal Control. H. Brown.—p. 22.
Early Diagnosis of Gastric Cancer. H. B. Devine.—p. 27.

Kenya Medical Journal, Nairobi, East Africa

3: 181-210 (Oct.) 1926

*Production of Plasmodium Tenue (Stephens). J. C. J. Callanan.—p. 182.
Disease of African Natives Suggestive of Scurvy. C. J. Wilson.—p. 202.

Nature of Plasmodium Tenue.—Callanan asserts that when the ring forms of *Plasmodium falciparum* reach their large stage, forms morphologically indistinguishable from those described as *Plasmodium tenue* may be produced simply by the factors involved in the process of smearing the blood on the slide, which are alluded to under the term "pressure." In other words, "tenue" forms are artificial. During a recent malaria epidemic, which was due in more than 95 per cent of cases to *Plasmodium falciparum*, forms resembling those described as *Plasmodium tenue* (Stephens) were not infrequently observed in the films. A number of cases came to necropsy, when it was noticed that smears from the brain and spleen invariably showed parasites identical with *Plasmodium falciparum*.

Lancet, London

2: 939-988 (Nov. 6) 1926

Theory of Diagnosis. F. G. Crookshank.—p. 939.
Significance of Anatomy. G. E. Smith.—p. 943.
*Studies in Blood Sugar. E. Porter and G. J. Langley.—p. 947.
*Action of Epinephrine in Aplastic Anemia. A. G. Gibson.—p. 948.
*Epidemic Encephalitis in Dogs. L. P. Pugh.—p. 950.
Halogen Eruptions. A. J. Hall.—p. 952.

Studies in Blood Sugar.—The blood sugar curve and the tolerance curve of fifty normal porsons, aged from 30 to 80, were examined by Porter and Langley. The results appear to demonstrate that: 1. The starving blood sugar level tends to rise from the normal, 0.08 per cent, of youth to nearly 0.15 per cent at 70 years of age. 2. The actual increment of sugar content of the blood, however, remains the same and is always less than 0.1 per cent. 3. At the ages considered, the highest point of sugar concentration is liable to be reached at the end of one hour, rather than at the end of half an hour as is usual in youth. 4. There is an increasing delay in return to the starving level, which fails to occur in the two and one-half hour period of observation. 5. In the decade from 30 to 40 years of age, urinary sugar in response to 50 Gm. glucose is not found, but in the decades above this, glycosuria in response to this amount of sugar occurs in about 30 per cent of tests, being rather higher in the decade from 60 to 70 years of age, when it is nearly 40 per cent. 6. In the decade from 70 to 80, the type of curve obtained differs greatly in that it does not rise so high, but takes considerably longer to return to the starving level. Hence, glucose tolerance curves should be interpreted not only from the point of view of the blood sugar rise and the period occupied in returning to starvation level, but also with due regard to the age of the patient. The increased lag in the curve, apart from age considerations, might easily lead to an opinion of potential diabetes when in reality it is believed that the delay is the physiologic result of age. This is particularly liable to be misleading in patients complaining of such troubles as pruritus and sciatica, which may or may not be diabetic in origin.

Value of Epinephrine in Aplastic Anemia.—Gibson relates the case of a girl, aged 11, who made an apparent recovery from a severe grade of aplastic anemia of unknown etiology, a type of anemia almost invariably fatal. The beginning of the recovery coincided with the giving of daily subcutaneous injections of epinephrine solution 1:1,000, beginning with 2 minims (0.12 cc.) and increasing gradually to 5 minims (0.3 cc.). The effect of the epinephrine was not deleterious. The blood pressure has not been found above 120; hypertrophy of the heart or thickening of the arteries did not occur.

Epidemic Encephalitis in Dogs.—The epidemic analyzed by Pugh, including more than fifty fatal cases, was one of what veterinary medicine has long known as the nervous form of distemper. Its chief interest lies in the fact that the occurrence of a number of quite definite "lethargic" cases leads to a closer comparison than has hitherto been made between the human and canine disorders. It appears that both in symptomatology and in the character of the cerebral lesions the two diseases are almost identical. This similarity is so close that the conclusion to be reached is either that the two are the same disease in different animals, or, alternatively, that the lethargic and encephalitic symptoms are not in themselves entitled to rank as a "disease"—i. e., a morbid process associated with a single virus—but are merely a particular form of reaction to which more than one virus may give rise.

Medical Journal of Australia, Sydney

2: 469-502 (Oct. 9) 1926

Acute Inflammatory Conditions of Mouth and Pharynx. R. Hennessy. —p. 469.
Muscles. J. E. Piper.—p. 472.
Position of Public Hospitals in Relation to Medical Profession. A. E. Brown.—p. 476.
Radiographic Diagnosis in Obstetric Practice. H. Flecker.—p. 481.
Standard of Weight for Australian Infants. R. Southby.—p. 483.
*Method of Treating Fractured Clavicle. J. F. Mackenzie.—p. 485.
Gallstones in Child of Nine Years. W. S. Brown.—p. 486.
Otitic Venous Thrombosis: Direct Infection of Jugular Bulb. G. A. D. McArthur.—p. 486.

Treatment of Fractured Clavicle.—Mackenzie describes a method for which he does not claim originality. Neither strapping nor appliances are required. With the patient in bed, the arm of the injured side is allowed to hang straight down to the floor, as if endeavoring to pick something off the floor. This first hanging down position is maintained for four hours. After four hours, a chair with a pillow on it is placed beside the bed. The patient then for the remainder of the treatment rests his elbow on this pillow in an easy position, but still with some slight drag on the shoulder. Mackenzie asserts that correction of deformity is certain and most accurate, however serious the fracture, and union appears to be extraordinarily rapid.

Tubercle, London

8: 49-96 (Nov.) 1926

*Industrial Fatigue in Connection with Tuberculosis. E. L. Collis.—p. 49.
Results of Treatment by Artificial Pneumothorax. C. B. Hogg.—p. 58.

Industrial Fatigue and Tuberculosis.—The inference is drawn by Collis that phthisis mortality in late middle life is an expression of lowered resistance to tuberculous infection, owing to the lungs having become pathologically injured. The evidence presented points to such pathologic injury as being an end-result of overstrain resulting from chronic fatigue, or of industrial life which appears in the past, at any rate, to have engendered a condition in middle life favorable to chronic phthisis. If the influence of malnutrition in early adult life and of overstrain in middle life have any meaning, they suggest the need (*a*) for stimulating anabolism in patients up to 30 years of age, and (*b*) for prolonged rest in the case of patients in middle life; that is to say, the age of the patient should be as important a factor in determining treatment as is the clinical condition.

Bulletins de la Société Médicale des Hôpitaux, Paris

50: 1577-1621 (Nov. 19) 1926

Encephalitis Following Vaccination. J. Huber.—p. 1580.
Case of Missing Sacrococcygeal Vertebrae. Baumgartner et al.—p. 1581.
*Lead Poisoning from Forks and Spoons. P. Pagniez and L. Lerond.—p. 1585.
Sodium Salicylate in Treatment of Epidemic Encephalitis. D. Dénéchau et al.—p. 1587.
Salicylate Treatment of Acute Meningitis. D. Dénéchau.—p. 1592.
Painful Nephritis from Influenza. Y. Goia.—p. 1599.
Sympathetic Phenomena with Sclerosis of Pulmonary Lobe. E. Sergent et al.—p. 1604.
Deamination of Blood in Liver Function Test. N. Fiessinger et al.—p. 1608.
Pernicious Anemia from Thorium X. Laignel-Lavastine and P. George.—p. 1617.

Poisoning from Metallic Table Utensils Containing Lead.—Pagniez and Lerond treated a young woman who had been suffering from lead poisoning for eighteen months. Investigation revealed that the forks and spoons used in the patient's home for about four years contained a large amount of lead (40.15 per cent). The husband and child did not present any pathologic signs. The syndrome of poisoning appeared after the patient had contracted diphtheria and had been treated with antitoxin. It is suggested that consequent changes in the body fluids favored the development of the intoxication.

Comptes Rendus de la Société de Biologie, Paris

95: 1137-1180 (Nov. 12) 1926. Partial Index

*Serologic Conditions of the Blood in the Umbilical Cord. G. Chappaz.—p. 1140.
*Reaction of the Spleen to Hemorrhage. L. Binet and B. Fournier.—p. 1141.
Influence of Vegetables on Gastric Secretion. J. H. Kellogg and W. N. Boldyreff.—p. 1145.
*Deamination Index and Protein Function of Liver. H. R. Olivier and M. Herbain.—p. 1154.
Blood Pressure in Retinal Capillaries. E. Lida and E. Adrogué.—p. 1160.
Serologic Classification of Gonococci. J. M. Miravent et al.—p. 1166.
*Physiologic Effect of Fluorides. L. Goldenberg.—p. 1169.
*Action of Coffee, Tea and Maté on Respiratory Metabolism in Diabetic Patients. T. Malamud.—p. 1170.
*Influence of Testicular Organotherapy. P. Heredia.—p. 1172.

Serologic Peculiarities of the Blood in the Umbilical Cord.—Chappaz examined the blood of the umbilical cord, also the retroplacental blood, immediately after delivery. On the fetal blood, the Hecht reaction was almost always negative, testifying to a particular constitution of the blood. The Wassermann reaction was often positive in the maternal blood while it was negative in the fetal blood. This is explained by the fact that the maternal and fetal bloods are separated in the placenta by a single layer of cells, which prevents mixing. The reaction was never positive in the fetal blood unless positive in the maternal blood.

Reaction of the Spleen to Venesection.—In Binet and Fournier's experiments on dogs, withdrawal of a small amount of blood induced a considerable increase in the number of red corpuscles. After five minutes the number of red corpuscles began to decrease, and at the end of thirty minutes was below normal. The posthemorrhagic polycythemia was not observed in splenectomized animals or in those with a compressed splenic pedicle. The phenomenon tends to prove that polycythemia after loss of blood is due to a contraction of the spleen, provoked by the hemorrhages.

Deamination Index in Study of the Protein Function of the Liver.—Olivier and Herbain describe their procedure for determining the total nonprotein nitrogen in the serum of persons with or without hepatic disease. One part of the serum is treated with trichloracetic acid, another part with phosphotungstic acid. The ratio of the nitrogen precipitated by a mixture of trichloracetic acid and phosphotungstic acid to the total nitrogen precipitated by trichloracetic acid is called the deamination index. It is a comparison of the amount of disintegrated proteins, intermediary between autogenous albumins and urea, with the total nonprotein nitrogen. It represents the urea coefficient, and thus appears to be convenient for the study of the proteolytic function of the liver. In patients with kidney diseases, the deamination index ranged from 0.17 to 0.20. It varied between 0.25 and 0.30 in those with cirrhosis of the liver, reaching 0.50 or 0.55 in cases of grave hepatic insufficiency.

Physiologic Action of Fluorides.—Goldenberg recalls that the toxic action of sodium fluoride was demonstrated in his experiments of 1919. Injections of sodium fluoride caused death in guinea-pigs and rabbits. Fluoride treatment of rats suckling their young resulted in death of the young. Application of the solution produced local eschars, while ingestion of fluoride was followed by glycosuria. Researches made from 1919 to 1921 showed that sodium fluoride retarded the growth of rats. The phenomenon was called fluorine cretinism. Prolonged administration brought on symptoms of fluorine cachexia. At that time it was noted that under the influence of chronic fluorine poisoning, the size of the thyroid in rats increased five or sixfold. The theory was then propounded that fluorides may be a causal factor of goiter.

Action of Coffee, Tea and Maté on Respiratory Metabolism in Diabetes.—Infusions of coffee, of tea and of maté were given in large quantities to six diabetic patients at a time when they were free from glycosuria. The beverages enhanced pulmonary ventilation; they did not modify the number of cardiac pulsations. Variations of the respiratory quotient were marked but irregular. The normal basal metabolism changed from 12 to 23 per cent, independently of the menses. The research was carried on during two summer months.

Influence of Testicular Organotherapy.—Twelve cocks, aged 6 weeks, were given 5 or 10 Gm. of fresh bull's testis daily by mouth. Some of the fowls were killed after two months. The testes appeared larger and softer than those of the controls. In two cocks killed after more than three months, growth was impaired and the development of the crest retarded. The plumage was thinner than in the controls. Their testes were much smaller than those of the controls. A cock, aged 1 year, was given cock's testis by mouth. On later examination, the testes of the treated cock proved to be considerably smaller than those of the control. It is assumed that the ingested gland exerted a hormonal influence and at the same time impeded the growth of the testes. Evidently the testicular hormone regulates the anatomic and functional condition of the testes.

Journal de Radiologie et d'Électrologie, Paris

10: 433-480 (Oct.) 1926

*Modified Lamp for Measurement of Chronaxia. P. Fabre and H. Desgrez.—p. 459.

Use of Lamp with Two Electrodes for Measurement of Chronaxia.—Fabre and Desgrez explain how electric currents provoke a contrary electromotor force in the body, rendering the measurement of chronaxia liable to error. This force originates chiefly in the epidermal layer immediately beneath the electrodes. In order to obviate this source of error, they use a lamp with two electrodes, "biod lamp," the description of which is given. This lamp allows regulation of the intensity of the current, which can thus be kept constant. Measured with constant currents, chronoxia is found to be from two to four times as high as when measured in the usual way. Examination of neuromuscular excitability is facilitated and the results obtained conform better to the physiologic law. Another advantage of their method, the authors say, is that it is possible to use accumulators of large capacity, which do not so easily get out of order as do those of small capacity.

Revue de Chirurgie, Paris

45: 357-456, 1926

Surgical Treatment of Amebic Abscess of the Liver. H. Costantini.—p. 357.
Surgery of Bone and Joint Tuberculosis. M. Courboulès.—p. 378. C'en.

45: 457-547, 1926

Rupture of Meningeal Vessels Without Fracture of Skull. M. Baculescu.—p. 457.
*Experimental Obstruction of Jejunum and Ileum. A. Chenut.—p. 474.
Pathogenesis of Visceral Ptosis in Women. G. Carajannopoulos.—p. 535.

Experimental Mechanical Obstruction of Jejunum and Ileum.—Experiments on 106 dogs were conducted by Chenut

along two lines. First, he produced mechanical obstruction of the jejunum and ileum by clamping a loop of bowel. None of these animals died as long as the mesenteric vessels remained intact. On the other hand, an induced arrest of the blood supply, with consequent gangrene of the intestinal loop, caused death in less than two days, without signs of peritonitis. Death was due to general infection, the origin of which might have been the intestinal contents or the intestinal walls. The infection occurred by the peritoneal route, and not by the blood or lymph circulations. The experiments teach that in obstruction of the intestine operation must be performed without delay. While mortality among patients operated on within the first twenty-four hours is 20 per cent, it is 70 per cent among those in whom the operation is delayed for three days. If the lesions are circumscribed, the involved region of the bowel may be resected immediately, but far better results can be obtained by bringing the bowel outside the abdomen, and dealing with the loop later. If gangrene sets in, resection is done; otherwise the loop is replaced in the abdomen. The latter method may be still more advisable in general infection than in local, such as peritonitis. Local anesthesia is employed.

Schweizerische medizinische Wochenschrift, Basel

56: 1017-1040 (Oct. 23) 1926

Serum Proteins in Infections. A. Schoch.—p. 1017.
Colon Bacillus Sepsis. K. Hofer.—p. 1022.
*Pharmacology of "Sanocrysin." K. von Neergaard.—p. 1026.
Familial Mental Diseases. Bénoziglio.—p. 1028.

Pharmacology of "Sanocrysin."—Von Neergaard finds that "Sanocrysin" dissociates to some extent into gold ions. Several physicochemical experiments indicate that it is a sodium aurothiosulphate of a constitution typical for complex salts of heavy metals, and that it is merely stabilized by the second molecule of thiosulphate.

Policlinico, Rome

33: 1489-1523 (Oct. 25) 1926

*Cerebrospinal Fluid in Apoplexy. F. Franchini.—p. 1489.
*Therapeutic Malaria. F. Serio.—p. 1490.
Pathogenesis of Scleroderma. C. Enrico.—p. 1493.
Appendix and Gallbladder. E. Cavazzere.—p. 1497.
"Deviation of Larynx in "Weakness of Diaphragm." G. Bilancioni.—p. 1500.

Cerebrospinal Fluid in Apoplexy.—Franchini observed a considerable increase in polymorphonuclears in the cerebrospinal fluid after hemorrhage of the brain. The increase starts on the second day and disappears in from ten to thirty days. The fluid sometimes gives the impression that pus is present. The polynucleosis is without prognostic significance.

Therapeutic Malaria.—Serio inoculated with malaria two patients with gastric ulcers and one with deforming arthritis. The patients survived, but did not improve.

Rivista di Clinica Pediatrica, Florence

24: 649-720 (Oct. 15) 1926

*Facial Phenomenon and Blood Calcium. C. Lombardi.—p. 649.
Hematology in So-Called Splenic Anemias. S. Gandolfo.—p. 661.
*Pyramidal Thorax. D. Larini.—p. 677.

Facial Phenomenon and Blood Calcium.—Lombardi found normal blood calcium as well as normal galvanic excitability of muscles in twenty-nine children who presented an isolated Chvostek sign.

Pyramidal Thorax.—Larini regards impaired development of the sternum, weakness of the diaphragm and retrosternal emphysema due to respiratory diseases as indispensable conditions for the development of pyramidal thorax.

Anales de la Facultad de Medicina, Montevideo

11: 339-418 (June) 1926

Unity or Duality of Obstetrics and Gynecology. J. Pou Orfila.—p. 339.
*Intestinal Parasites in Uruguay. P. Rubino and Varela Fuentes.—p. 357.
Partial Tear of Renal Artery from Trauma. A. Berhouet.—p. 387.
Intestinal Occlusion by Food Mass. H. Valdez Olascoaga.—p. 395. Summarized when published elsewhere.

Intestinal Parasites in Uruguay.—Nine hundred and nine fecal examinations were made on 270 patients by Rubino and Varela Fuentes. Intestinal parasites were found in 128 cases, 48 per cent. In most there were two or more infections. Ameba and lamblia proved the most common protozoa. In a great majority of patients, digestive symptoms developed. Constipation (forty-three cases) was far more prevalent than diarrhea (thirteen). This seems to be influenced by the nature of the infection. Achylia gastrica was found in fifteen of forty-five cases studied, enlarged liver in twenty-three. Sensitiveness of the gallbladder to pressure was present in thirty-two cases (30 per cent of the number examined for this sign). Liver insufficiency is common and necessitates caution in prescribing arsenical preparations.

Crónica Médica, Lima

43: 209-232 (Aug.) 1926

Transplantation of Monkey's Testis into Man. R. Spurr.—p. 209.
*The Diarrheal Syndrome. E. Escomel.—p. 217.

Diagnosis and Treatment of Diarrhea.—There is not any excuse nowadays, Escomel remarks, for treating diarrhea without laboratory diagnosis. There are several diarrheal conditions which look alike though they spring from very different causes. Treatment of the soft green stools of infancy must vary according to their reaction. In the acid type, precipitated chalk and gum will prove effective, while in the alkaline form, one must rely on calomel and lactose. In acetonuria cases, sodium citrate or bicarbonate help. Only very occasionally is it necessary to resort to epinephrine or insulin. Alkaline diarrhea in aged people often proves amenable to a potato flour diet and hydrochloric and lactic acid combined with quince syrup. Diet is, of course, all important. In protozoal infections the cause must be sought. Emetine seldom fails in amebic cases, if one uses a potent preparation properly. The intravenous route is the best; subcutaneous injections must be used in children and in patients with heart disease. To guard against the depressive action, sparteine may be added. In one case, deemed uncontrollable, as a tumor in the right lower abdominal quadrant kept on discharging new amebas, a course of forty intravenous injections of emetine and sparteine finally succeeded in eliminating the collection and curing the patient.

43: 265-304 (Oct.) 1926

*Probable Etiologic Relation Between Keratoconus and Myopia. L. A. Chávez Velando.—p. 265.
Lima University and the Future Bolivar University. L. Avendaño.—p. 270.

Causative Relation of Keratoconus to Myopia.—In his trips through the Bolivian Andes, Chávez Velando was impressed with the increasing prevalence of short-sightedness, often serious, in the higher altitudes. Thus in Arequipa and Cochabamba, on the coast, myopia forms only 60 and 41 per cent, respectively, of ametropic cases. At La Paz and Oruro, on the plateau, the figure rises to 72 per cent. The percentage of serious cases varies from 9 to 10 on the plains, but exceeds 23 in the Andes, while the percentage of myopia among refraction cases is 41 and 89, respectively. In keratoconus a similar phenomenon was revealed. In five years spent in eye clinics in the United States and Europe, Chávez did not see a single operative keratoconus case. In ten months at La Paz he was called on to operate eleven times because of this trouble, while in Arequipa he has treated only two cases in eighteen years, and one was in a French nun. The only apparent difference lies in the profuse light in the plateau region. The bright sunshine may perhaps weaken corneal resistance and pave the way for the development of keratoconus.

Gaceta Médica de Caracas, Caracas

33: 257-273 (Sept. 15) 1926

*Study of Human Blood in Caracas. J. M. Romero Sierra.—p. 257.
Butyric Acid Fermentation in Diabetic Coma. G. Delgado Palacios, Jr.—p. 270. C'en.

Blood Constituents in Caracas.—Romero Sierra took as the subject for his address, on his admission to membership in the National Academy of Medicine, a study of human blood in Caracas. In seventeen presumably normal students from 17 to 25 years of age, the average of the various constituents of the blood were: hemoglobin (Tallqvist), 82.5 per cent;

erythrocytes, 4,552,533; leukocytes, 7,415; differential count: large mononuclears, 14.8 per cent; medium mononuclears, 7.9; small mononuclears, 7; lymphocytes, 14.9; polymorphonuclears, 59.3; eosinophils, 10.2; mast cells, 0.8. In general, the hemoglobin and erythrocyte counts were practically the same as given in textbooks for the temperate zone and found by Kop in the tropics. As regards the leukocyte readings, there is but little difference from those of temperate climates, but the eosinophils show a tendency to increase, as is the case in tropical countries, probably because of intestinal parasitic infestation. Arneth's index, 33.05, is far lower at Caracas than in temperate climes. In making these studies in countries such as Venezuela, cases of parasitic infection should be discarded. In the discussion, González pointed out that a careful determination of this point would undoubtedly have ruled out several cases with suggestive leukocyte counts. At the Iturbe Institute the erythrocyte count was determined in thirty-four persons. After excluding thirteen with an eosinophil content higher than 3.5 per cent, the erythrocyte count averaged 4,590,000 in six men and 4,433,000 in fifteen women.

Repertorio de Medicina y Cirugía, Bogota

17: 664-726 (Sept.) 1926

Hemorrhagic Purpura. C. J. Fonseca.—p. 674.
*Treatment of Whooping Cough. F. Cuevas.—p. 677.

Treatment of Whooping Cough.—Out of 100 cases of whooping cough treated by Cuevas with pertussis vaccine, only sixty-eight completed the course of five injections. A local reaction developed in forty-five of seventy cases observed and a general reaction in thirty-eight of ninety-eight. Among the sixty-eight patients, thirty improved, seventeen remained stationary, twenty became worse and one died. The vaccine, while failing as a curative agent, proved, however, its palliative value in 40 per cent of the cases. The only death was caused by asphyxia the day after the last injection. More than eighty patients were treated with bromides and belladonna, and more than 60 per cent improved. Belladonna, however, must not be used in infants under 6 months nor in cases with great prostration. The pupils must be watched. Peroxide was tried in ten cases, without result.

Semana Médica, Buenos Aires

33: 1317-1384 (Nov. 18) 1926

*Sleep and Depressive States. J. M. Obarrio.—p. 1317.
Hernia in Spigelius' Semilunar Line; Adherent Pericolitis. J. R. Goyena.—p. 1324.
Rare Association of Eye Malformations. J. Lijó Pavia and M. Dusseldorp.—p. 1326.
Postpartum Vaginal Atresia. E. Nicholson and S. E. Bermann.—p. 1331.
Search for Alkaloids in Old Viscera. J. Magnin et al.—p. 1334.
Treatment in Retention of the Membranes. M. L. Pérez.—p. 1335.
Endocrine and Sympathetic Factors in Scleroderma and Ichthyosis. C. P. Waldorp and G. Basombrio.—p. 1351.
Diet in a School for Feebleminded Children. P. Winocur.—p. 1361.
Primary Endothelioma of Diaphragmatic Pleura. P. Cossio.—p. 1365.
*Roffo's Test in the Diagnosis of Cancer. M. Beatti.—p. 1367.
Experimental Mycelial Pseudotuberculosis. A. Mary.—p. 1367.
Arterial Spasm. A. J. Pavlovsky.—p. 1370.

Sleep and Depressive States.—Nineteen cases are described by Obarrio to demonstrate that sleep may exert a detrimental action in such conditions as melancholy, depression, anxiety and decreased suprarenal function. In such conditions, sleep, instead of resting, keeps up and stresses the underlying cause. Examination brings to light suprarenal deficiency, low blood pressure and general intoxication. Treatment must aim at the etiologic factor.

Failure of Roffo's Test in the Diagnosis of Cancer.—At Pérez' Institute of Surgical Pathology at Rome, Beatti checked the results of Roffo's neutral red test. The test proved very unreliable, yielding only 20 per cent of positive reactions in cases of internal cancer. On the other hand, the reaction was positive in cases of pneumonia, cirrhosis of the liver and tuberculosis. In epithelioma of the skin, it was negative.

Siglo Médico, Madrid

73: 481-508 (Nov. 20) 1926

The Colloidal Aspect of Lytic Reactions. M. Salazar.—p. 481.
*Traumatism as Exciting Cause of Latent Pathologic Conditions. A. Morales.—p. 483.
Malarial Therapy, etc. A. V. Nagera.—p. 486. C'cn.

Traumatism and Disease.—Injuries, says Morales, may be either the cause or the result of disease. In three cases described, operative trauma induced a flare-up of latent malaria. The relation of cause and effect becomes most evident in insanity. Two masons were injured while working; in one the resulting psychosis proved curable, but in the other it assumed a malignant, delirious form and the man died in a comatose condition after fifteen days. A fall caused a latent insanity in a girl to burst forth in full force. In some cases insanity leads to attempted suicide, and the patient may try to mislead as to the cause of his injuries. A highly educated professor blamed a fall for wounds caused by a razor. A sculptor tried to end his life with a pistol as a result of reading Calderon's "Life is a Dream."

Archiv für die gesamte Physiologie, Berlin

214: 243-420 (Oct. 7) 1926

*Storage of Protein in the Liver. W. Berg.—p. 243.
Metabolic Experiments on "Hunger Artists." P. Junkersdorf and F. Liesenfeld.—p. 250.
Alteration in Color Perception. E. Gellhorn and G. Fabian.—p. 274.
Fat and Lipoids in the Blood. R. Iwatsuru.—p. 295.
Transplantation of the Eye. H. Przibram.—p. 302.
Conditioned Reflexes Based on Remnants of Impression. W. A. Leonow.—p. 305.
Origin of Blood Ammonia. A. D. Cholopoff.—p. 320.
Intestinal Wall and Liver in Angiostomized Dogs. A. J. Charit.—p. 327.
*Acid-Base Balance in Angiostomized Dogs. A. J. Charit.—p. 331.
*Resorption of Fat and Cholesterol in Angiostomized Dogs. S. W. Nedswedski.—p. 337.
*Amino Acids in Blood and Different Organs of Angiostomized Dogs. N. P. Kotschneff.—p. 343.
Periodicity of Stimulus in Injury of Heart. E. Mangold and K. Shimizu.—p. 349.
Diabetes and Effect of Insulin. H. Häusler and O. Loewi.—p. 370.
Energy Metabolism in Man. E. Simonson.—p. 380.
Physiology of Standing. E. Simonson.—p. 403.
Mechanism of the Embracing Reflex. H. Lullies.—p. 416.

Storage of Protein in the Liver.—As the sole nitrogenous constituent of the food, Berg fed white rats artificially digested proteins in doses of 1 Gm. a day, after a brief period of starvation. Histologic examination of preparations of the liver of these animals stained with methylgreen-pyronin, according to Pappenheim, showed a marked deposition of proteins. Doses of from 3 to 4 Gm. to each 100 Gm. of body weight daily for eight days caused toxic effects, which were manifested in intestinal disturbances but which did not influence the storage of proteins in the liver.

Acid-Base Balance in Angiostomized Dogs.—Charit found that the acid-base balance of the arterial blood in dogs was changed in the intestinal wall: The carbon dioxide capacity of the blood of the portal vein was increased from 1 to 18 per cent. The liver absorbed more reserve alkali from the portal vein than the latter had taken up from the intestine. The venous blood of the liver thus contains a relatively large amount of carbon dioxide, which is excreted during the passage through the lung, whereas the acid-base balance is maintained in the peripheral blood. The alkali reserve of the arterial blood is somewhat increased during the passage through the kidneys, probably because of the excretion of acid by this organ.

Adsorption of Fat and Cholesterol in Angiostomized Dogs.—Experimenting on dogs, Nedswedski found that cholesterol and fat were partially resorbed by the portal vein and that the liver retained a smaller amount of fat from the circulating blood than did other organs.

Amino Acids in Blood of Angiostomized Dogs.—In Kotschneff's experiment the intestinal wall seemed to excrete into the blood polypeptids, formed from simple amino acids. Polypeptids were formed also in the liver, kidneys and muscles. During digestion a considerable part of the residual nitrogen of the blood, not containing urea or amino acid nitrogen, consists of polypeptids.

Beiträge zur klinischen Chirurgie, Berlin

137: 361-520, 1926

Late Results of Gunshot Wounds of the Brain. K. Steinthal and H. Nagel.—p. 361.
Etiology and Treatment of Hirschsprung's Disease. K. Steinthal.—p. 401.

*Examination of the Lymph Vessels. P. Rostock.—p. 408.
*The Blood Picture in Surgery. F. Bauer.—p. 430.
Abdominal Injuries from Blunt Force. O. Lauer and E. Schnebel.—p. 441.
*Sudden Deaths After Strumectomy. H. Doerfler.—p. 465.
Comparison of Ether, Acetylene and Nitrogen Monoxide Anesthesia P. Sudeck.—p. 493.
Nitrous Oxide Anesthesia. H. Schmidt.—p. 506.
Vertical Roentgenstereograms with Bucky-Potter Diaphragm. O. Hahn.—p. 519.

Examination of the Lymph Vessels by Magnus' Method.—The tissue to be examined is allowed to absorb hydrogen peroxide. As soon as this comes in contact with the lymph, it is decomposed by the catalase of the lymph, and the oxygen is freed and fills the vessels. The process is watched under the microscope; the stereoscopic microscope is strongly advised, as this enables one to note the relation in space of the lymph vessels to one another. Rostock reproduces a number of photomicrographs to show the appearance of the lymph vessels, made visible by this method. The blood vessels, which the gas also fills, are easily differentiated. He describes, with illustrations, a simple apparatus for photographing the specimens through the microscope, and discusses the special requirements in the preparation of microscopic slides of tissues treated by Magnus' technic.

The Importance of Schilling's Hemogram for the Surgeon.—As an example of the value of the leukocyte picture in diagnosis, Bauer cites the case of a patient sent for immediate operation because of violent pains in the right side of the abdomen, from striking himself in this region against a jutting ledge six days previously and three weeks after operation for appendicitis. The tongue was dry and coated, and the abdominal wall was tense on the lightest touch. The blood picture was not indicative of injury, and a diagnosis of neurasthenia was made. On the other hand, changes in the blood picture may be the earliest warning that the need for operation is urgent, as in a case of strangulated femoral hernia (Littré's) in which the clinical picture was not suggestive of emergency. A low leukocyte count with pronounced shifting to the left showed that the organism was engaged in a losing fight with a severe infection. Progressive shifting to the left after operation justifies a grave prognosis, even in cases in which the patient shows objective and subjective improvement. Arrestation in the nuclear shifting is a sign of improvement, even though the blood picture, regarded by itself, is bad. In the differential diagnosis of difficult cases ...e blood picture is most instructive, but the other symptoms must be considered with it. A man was sent for operation with the clinical diagnosis, carcinoma of the stomach, which was not borne out by roentgen-ray examination. From the blood picture, with high lymphocyte and monocyte counts, tuberculosis of the peritoneum or ileocecum seemed probable, but the symptoms were acute. At necropsy tuberculosis of both suprarenals, with acute insufficiency, was found. It was then recognized that the blood picture had been typical for Addison's disease.

Sudden Death After Strumectomy.—The percentage of sudden deaths in the 1,000 strumectomies studied by Doerfler was 0.9, 31 per cent of the entire mortality. The causes of sudden death fall into three groups: obstruction of the respiratory passages, cardiovascular disturbances and status lymphaticus. Death from collapse of the trachea may often be averted by positive pressure. In edema of the glottis, tracheotomy must be at once performed and the cause (secondary hemorrhage or mediastinal emphysema) sought. Early operation is the best means of averting danger from the side of the circulatory system. With goiter heart, preliminary treatment with positive pressure is recommended. In thyrotoxic injury to the circulatory apparatus, the entire organism, but especially the vegetative nervous system, should be examined and watched before and after operation. In goiter patients between the ages of 16 and 21, hyperplasia of the lymphatic organs at the base of the tongue and in the pharynx arouses suspicion of status lymphaticus. It is not desirable to operate in these cases, and if operation is absolutely necessary, chloroform must at all events be avoided.

Deutsche medizinische Wochenschrift, Berlin

52: 1799-1840 (Oct. 22) 1926

*Gallstone Formation. L. Aschoff.—p. 1799. C'cn.
*Cholecystopathies. G. von Bergmann.—p. 1801. C'cn.
Surgery of Exophthalmic Goiter. P. Fiori.—p. 1803.
*Spontaneous Recovery from Cancer. O. Strauss.—p. 1805.
Injuries of Aorta. H. Wildegans.—p. 1810.
Scarlet Fever Studies. E. Seligmann et al.—p. 1812.
*Traumatic Neurosis. M. Kollmann.—p. 1814.
Vaccination and Paralysis. K. Arnold and M. Kopp.—p. 1816.
*Treatment with Own Pus. K. Lutz.—p. 1818.
Phrenic Nerve and Breathing. L. Dünner and M. Mecklenburg.—p. 1819.
Skin Flap Transplantation. A. Salomon.—p. 1821.
Foreign Body Appendicitis. Von Renner.—p. 1821.
Gonococcus and Influenza Bacillus Pyelitis. R. Kopp.—p. 1822.
Alcohol Legislation in Denmark. K. A. Heiberg and P. Heiberg.—p. 1823.
New Regulations for Physicians. S. Alexander.—p. 1825.

Gallstone Formation.—Aschoff discusses stasis, infection and disturbance of cholesterol metabolism as factors in the formation of gallstones. The last two are not much influenced by treatment. Prevention and treatment should center on the stasis, which may be either of hypotonic origin (from the gallbladder) or of hypertonic origin (from the common bile duct and cystic duct). Functional disturbances of Oddi's sphincter as well as of Lütkens' sphincter of the cystic duct are important.

Cholecystopathies.—Bergmann prefers the term cholecystopathy to cholelithiasis, since the formation of stones is only a part of the problem. The majority of gallstone carriers are patients who have recovered from a cholecystopathy which had not been diagnosed. If all the modern methods—such as duodenal tubage, improved roentgen-ray technic and filling the gallbladder with a contrast substance—were used and good clinical histories taken on every patient, whatever his apparent illness, 25 per cent of the women and 10 per cent of the men would be subjected to cholecystectomy, provided that the principle of routine early surgical intervention in gallstones were accepted. This is the author's answer to the tendency to accept this principle. Nevertheless, he is not opposed to cholecystectomy in many patients, although he has frequently seen recurrence of the disturbances after operation. He regards the gallbladder as an organ for concentration rather than as a reservoir for bile. A positive result from cholecystography (after administration of a contrast substance) with a negative result from injection of pituitary extract might indicate that the gallbladder loses its contractile power earlier than its ability to receive the bile.

Spontaneous Recovery from Cancer.—Strauss made extensive inquiries on the occurrence of spontaneous healing of malignant tumors. The result was extremely sad: it seems that sarcomas may heal spontaneously, although this is very rare. With carcinomas the alleged recoveries were probably only simulated by peculiarities of their course.

Traumatic Neurosis.—Kollmann deals with the legal aspects of so-called traumatic neuroses. He quotes decisions of the German superior courts, which refuse to admit the injury as cause of the hysteria. The wish to obtain indemnity—not the injury—is responsible for the symptoms. He is opposed to any compensation in such cases.

Treatment with the Patient's Own Pus.—Lutz injected the patient's pus subcutaneously in twenty-five cases. The treatment failed in the large majority.

Klinische Wochenschrift, Berlin

5: 2001-2048 (Oct. 22) 1926

*Psychotherapy and Psychiatry. F. Kehrer.—p. 2001.
*Elimination by Stomach and Kidney. W. Lipschitz.—p. 2008.
*Regulation of Blood Sugar. F. Depisch and R. Hasenöhrl.—p. 2011.
*Treatment of Wounds by Action on Nerves. F. Schück.—p. 2014.
*Blunders in Blood Grouping. P. Schumacher and K. Atzerodt.—p. 2016.
*Lipoids as Protein-Savers. E. Wheeler-Hill.—p. 2018.
*Alteration in Virulence of Pneumococci. W. Levinthal.—p. 2020.
*Oral Diphtheria Immunization. K. Fuerst.—p. 2021.
*Action of Pregnant Women's Serum on Uterus. F. G. Triviño.—p. 2022.
Cultures of Spirochaeta Obermeieri. W. Aristowsky and R. Hoeltzer.—p. 2024.
"Invisible Virus." F. Bösser.—p. 2026.
Reply. E. Friedberger.—p. 2026.

Streptococcus Infection and Reticulo-Endothelial System. N. Louros and H. E. Scheyer.—p. 2027.
Pleural and Ascitic Fluid. Unverricht.—p. 2029.
Dysoxidative Carbonuria and Action of Minerals. A. Bickel.—p. 2030.

Psychotherapy and Psychiatry.—Kehrer deals with the development and aims of psychotherapy. It is the oldest of therapeutic methods, but it became a separate science only after the moralizing and theological theories on the etiology of mental diseases had been disregarded. As early as in 1783, K. P. Moritz introduced his "Neues Magazin für Erfahrungs-seelenkunde" with the slogan: "Facts and no moral twaddle" —a principle which is here to stay. It is important to define the relation of psychotherapy to the three other important forms of intentional influencing of other people—namely, the religious care of the soul, pedagogy and diplomacy. Hippocrates was the first man in history who attacked the conception that mental diseases belong to the domain of the priests. The care for eternal bliss should be left to the priests; the physician's efforts must be limited to bringing the patient into a condition in which he is accessible to this care. The relation to diplomacy was expressed by Pinel 125 years ago: "The principle that human passions cannot be exterminated, but that one should be played against the other is as useful in medicine as it is in politics." The relation to pedagogics is similar. He refuses to claim for physicians the privilege of being the educators of the people. The part of medicine is only to remove pathologic changes that prevent the education of the individual. Recent years have shown that psychotherapy may have surprising results in apparently organic conditions. He was most impressed by the cure of an apparently familial ptosis. He regards as Freud's "Darwin-like" deed the fact that he applied the idea of evolution to human souls, reviving or newly discovering a mass of observations that had been made by intuitive people without attracting much attention even from themselves and had therefore remained fruitless. Moreover, Freud proposed an "uncovering" method in place of the concealing and repressing method previously used, especially in hypnosis. He declares Freud's formula to be: "Self-cure by the highest possible degree of self-knowledge." Some recent investigators have found that knowledge alone is only the first step toward cure and try to add psychosynthesis to psychanalysis. The technic does not matter very much and will remain quite individual. All methods—from sugar to the whip—may produce good results. The clinics should test the various procedures and report on their results independently and without prejudice, while retaining a conservative attitude. Even schizophrenia may be favorably influenced. Its manifestations should not become worse than necessary and the patient should be prevented from "drowning" in his symptoms.

Elimination by Stomach and Kidney.—Lipschitz points out that delayed elimination of a substance by the kidney is not necessarily due to renal insufficiency: It may be caused by unusual retention in an organ or by elimination into the stomach with reabsorption. He found that dextrose passes into the stomach after intravenous injection. The threshold of the stomach is higher than that of the kidney. The amount of sugar excreted into the stomach varies between 1 and 20 per cent of the amount found in the urine. Salicylic acid was not excreted into the stomach. It appeared there only by reflux from the intestine. While the kidney eliminates the iodine ions like a foreign substance, the stomach does not differentiate them from chlorine ions. The ratio of the two is the same in the blood and in the stomach contents.

Regulation of Blood Sugar.—Depisch and Hasenöhrl observed a much more pronounced hypoglycemia in the third and fourth hour after administration of from 750 to 1,000 cc. of water with from 75 to 100 Gm. of dextrose than after administration of the water without sugar. Under similar conditions, a small dose (5 units) of insulin caused a hypoglycemic reaction only when the sugar was used. They explain this paradoxical phenomenon by the hypothesis of hyperproduction of insulin after administration of sugar and its cumulation with the dose injected. Epinephrine glycemia was lower in the stage of alimentary hypoglycemia. The authors assume here, therefore, an increase in sugar fixation by the liver similar to that which Falta attributes to insulin and suggest using the hypoglycemia following administration of dextrose, which is especially pronounced in patients with essential hypertension, for testing the endocrine function of the pancreas. They also tried to use this reaction instead of insulin injections for fattening patients lacking in appetite and mention one success with a breakfast consisting of 50 Gm. of sucrose in 500 Gm. of tea.

Treatment of Wounds by Action on Nerves.—Schück discusses the factors which lessen and those which stimulate inflammation. Cold and peripheral anesthesia, which paralyze the vasodilators, epinephrine which excites the vasoconstrictors and—according to recent investigations—calcium diminish the inflammation. Heat and skin irritants, which excite the vasodilators, sympathectomy, which eliminates the constriction, and potassium ions increase the inflammation. A dressing soaked in a 0.6 per cent solution of potassium chlorate cleanses a torpid wound within twenty-four hours. Red granulations form better than after any other procedure. It is advisable to alternate between potassium and calcium dressings to "push" the process anew ("Schubwirkung"), when the potassium action wears off. Neither potassium nor calcium has any appreciable influence on epithelization. When a stimulant to epithelization is desired—and it should not be tried too soon—a boric acid ointment containing epinephrine is of great value.

Blunders in Determination of Blood Groups.—Schumacher and Atzerodt report an almost fatal collapse after a test infusion of 5 cc. of blood supposed to belong to group I (0) into the donor's mother (group I). The test was repeated afterward and with identical results: no agglutination of the donor's blood by the test serum II or III. A fresh test serum III, however, agglutinated the blood of the donor, who therefore belonged in reality to group II. Since then the authors have used test serums only for about two weeks and have retested them. When investigating the alleged changes of blood groups following various procedures, they confirmed only the pseudo-agglutinations that occur after diathermy of the abdomen and after passage of a galvanic current through the body. Addition of one or two drops of physiologic solution of sodium chloride breaks up the pseudo-agglutination.

Lipoids as Protein-Savers.—Wheeler-Hill's experiment made on himself indicates that the minimum protein requirement in a lipoid-free diet is lowered still further if lipoids are added.

Change of Virulence of Pneumococci.—Levinthal cultivated an extremely virulent strain of pneumococci (type I) in a corresponding serum. The strain lost its virulence as well as its type specificity. One-cell cultures from this avirulent strain kept at 37 C. did not change. When cultured repeatedly at 25 C., the strain regained its original virulence and also agglutinated typically. The experiment shows that the strain was able to regenerate Avery's hypothetic S substance.

Oral Diphtheria Immunization.—Fuerst reports only negative results from her attempts to immunize against diphtheria by oral administration of toxin-antitoxin mixtures. The attempt to increase the permeability of the intestine in infants by preliminary administration of 5 Gm. of sodium benzoate had to be given up, because this drug alone caused grave intestinal and general disturbances.

Action of Pregnant Women's Serum on Uterus.—Triviño injected daily from 0.25 to 0.5 cc. of serum from pregnant women into female mice (4 to 6 weeks old). In forty-two out of forty-three experiments, the uterus of these animals was found to have increased in size after from seven to eleven days. The active substance is alcohol-soluble, thermostable and perhaps diffusible.

Medizinische Klinik, Berlin

22: 1631-1668 (Oct. 22) 1926

Scarlet Fever. F. Breinl.—p. 1631.
Pertubation in Diagnosis of Sterility. F. Kok.—p. 1634.
*Therapeutic Transplantation of Ovary. A. Loeser.—p. 1637.
*Avulsion of Tendon of Extensor of Finger. A. Kirchenberger.—p. 1640.
Ether Treatment of Postoperative Bonchitis. H. Magnus.—p. 1641.
*Dangers of Electric Waterbaths. Loewenthal.—p. 1641.

*Epidemic of Aphthous Stomatitis. B. Peiser.—p. 1644.
Roentgen-Ray Treatment of Buboes. W. Curth.—p. 1646.
Tabes in Children. L. Lilienthal and H. Lange.—p. 1647.
Bilateral Avulsion of Tendon of Quadriceps. Hubrich.—p. 1648.
Rapid Serodiagnosis of Syphilis. E. Kadisch.—p. 1649.
*Insulin and Hydrocyanic Acid. S. Rosenberg.—p. 1650.
Sickness Insurance for the Middle Classes. A. Wolff-Eisner.—p. 1652.
Vitamins and Bacteria. S. Lichtenstein.—p. 1653.
Cancer and Its Treatment. O. Strauss.—p. 1654. C'en.

Therapeutic Transplantation of Ovary.—Loeser performed ovarian transplantation in sixteen women. The result was good, although transitory, in those whose ovaries had been previously removed. It was moderate in disturbances of the menopause. The implantation of ovaries failed in women with infantile sex organs.

Avulsion of Tendon of Extensor of Finger.—Kirchenberger reports complete success from conservative treatment in a case of avulsion of the tendon from the end phalanx of the thumb.

Dangers of Electric Waterbaths.—Loewenthal's patient, a young woman, received hydro-electric treatments. A sudden change of current made her adduct both thighs so high that the knees touched the chin. The necks of both femurs were broken by this sudden movement.

Epidemic of Aphthae.—Peiser observed an epidemic of mild aphthous stomatitis. It affected forty-five out of a hundred persons working in the same room. It seems that the infection was transmitted by filing cards.

Insulin and Hydrocyanic Acid.—Rosenberg injected a rabbit intravenously with 25 units of insulin and 2 cc. of a 50 per cent solution of dextrose. Five minutes later, 0.4 cc. of a 2 per cent solution of potassium cyanide (0.008 Gm.) was injected intravenously. The animal recovered within a few minutes. It died in nineteen seconds when, eight days later, the same experiment was repeated without addition of the insulin.

Monatsschrift für Geb. und Gynäkologie, Berlin

74: 319-396 (Oct.) 1926

Gwathmey's Anesthesia. E. Martin and K. Jackle.—p. 319.
Rapidity of Growth of Carcinoma of the Cervix. E. Weinzierl.—p. 322.
*Globus Abdominalis. J. S. Galant.—p. 338.
Emphysema in Asphyctic New-Born Infants. E. Poeck.—p. 341.
*Effect of Insulin on Weight-Curve in Infancy. A. Mahnert.—p. 347.
Congenital Contracture of Knee Joint. H. Brandt.—p. 359.

An Hysterical Phenomenon of Genital Origin in Woman, Globus Abdominalis.—A tuberculous woman, aged 22, complained of the sensation of a ball in the lower abdomen, which at times moved upward as high as the ribs, causing extreme pain. The genital organs were distinctly infantile, in spite of the fact that she had been married for several years and a year and a half ago had borne twins. The children, who were premature, had lived only one day; consequently the woman had never suckled. A normal puerperium was followed by complete amenorrhea, which persisted. Previously menstruation had been regular and painless. The right ovary was enlarged and tender. The left ovary could hardly be palpated. It was impossible to find any trace of a tumor in the abdomen. The sensation of which the patient complained was an hysterical symptom which had arisen, Galant insists, independently of suggestion, for she knew nothing of her ovaritis and did not speak of a tumor, but of a "ball" in the abdomen. The case shows the great importance of the rôle of the genital organs of woman in the origin of hysterical symptoms, and also supports the view of those gynecologists who assert that all symptoms appertaining to the woman's genital activity, even when hysterical, have an organic basis.

Effect of Insulin on Weight-Curve of Premature and Weak Infants.—Mahnert gave insulin to eighteen breast fed infants born of healthy mothers. Eleven of the children were premature, with a birth weight of from 1,250 to 2,000 Gm.; seven were born at term, but were either underdeveloped at birth and gained weight slowly and irregularly, or had suffered a serious loss of weight in the third or fourth week. One unit was injected subcutaneously two or three times a day before feedings; the injections were given on three or four successive days or at two-day intervals. Usually from 1 to 3 Gm. of dextrose in the form of a 20 per cent solution was given by mouth after each feeding that had been preceded by insulin. In the premature children, the insulin treatment was started on the day of birth or one or three days after. In all except one of the children treated, the insulin exerted a distinctly beneficial effect on the weight. It checked the diminution of weight after birth and changed a falling into a rapidly rising weight curve.

Monatsschrift für Kinderheilkunde, Leipzig

33: 385-480 (Sept.) 1926

*Music and Lactation. Nebert and E. W. Koch.—p. 385.
*Immunization of Cornea. K. Luriy.—p. 391.
Treatment of Rumination. E. Mommer.—p. 395.
Therapeutic Experiments in Spasmophilia. K. Fuerst.—p. 399.
Differential Diagnosis of True Diphtheria and Pseudocroup in Measles. C. Detering.—p. 402.
*Peptidase in the Urine After Irradiation with Artificial Sunlight. E. Drebber.—p. 412.
A New Conception of Scarlet Fever. E. Kramár and D. Franciszczi.—p. 421.
Electric Breast Pump. K. Scheer.—p. 433.
Influenza Enteritis in Infants. S. Rosenbaum.—p. 441.

Music and Lactation.—Nebert and Koch support the so-called two phase theory of lactation. According to this theory the mammary glands produce milk in the intervals between suckling (the first phase) and this is followed by a markedly increased production during suckling (the second phase). In the second phase as much milk may be secreted in ten minutes as is produced in the first phase in ten or twelve hours. Nervous influences play an important rôle during the second phase. In cows and goats the production of milk was increased if music was played in the stable during milking. Music did not influence lactation in wetnurses, although it is possible that women who are especially susceptible to music might show an increase in milk production which would have practical value.

Immunization of Cornea with Avirulent Vaccine.—In Luriy's experiments on rabbits, repeated inoculations of the cornea with avirulent vaccine did not produce immunity but caused a pronounced allergic reaction.

Peptidase in the Urine After Irradiation with Artificial Sunlight.—Drebber studied the peptolytic index of the urine of ten healthy children from 4 to 13 years of age. After irradiation with ultraviolet rays the index was decreased to one fourth to one thirty-second of the original value. On the average the decrease reached its maximum two hours and twenty minutes after the irradiation. There was no relation between the peptolytic index and the acidity of the urine. The blood serum showed similar changes in the peptolytic index.

Strahlentherapie, Berlin and Wien

23: 577-786, 1926

Problem of Dosage. F. Dessauer.—p. 579.
Tuberculosis of the Genital Organs and Peritoneum in Women. O. Gragert.—p. 594.
*Injection of Dextrose in Roentgenotherapy of Cancer. E. G. Mayer.—p. 604.
Treatment of Cancer of the Tongue. B. F. Schreiner and H. F. R. Brown.—p. 631.
Development of Tumor After Roentgen-Ray Castration. E. Vogt.—p. 639.
Effect of Ultraviolet Rays on Erythrocytes. H. Koeppe.—p. 671.
*Biologic Effect of Roentgen Rays. W. Schmidt.—p. 681.
Urobilin Excretion After Roentgen-Ray Irradiation. H. Bromeis.—p. 687.
Sensitiveness to Rays and Mustard Oil. G. Schwarz.—p. 702.
Vitamin Problem in Rachitis Therapy. F. Kohl et al.—p. 706.
The Sun's Rays in German North Sea Region. P. A. Galbas.—p. 711.
*Irritation Tumors. K. Brandes.—p. 715.

Roentgen Irradiation and Intravenous Injection of Dextrose in Treatment of Cancer.—In his treatment of eighty-four cases of cancer of different organs, Mayer injected 10 cc. of a 25 per cent solution of dextrose intravenously before each irradiation. In 25 per cent of the cases the combined treatment gave better results than roentgen irradiation alone. It seemed that injection of dextrose caused more rapid retrogression of the neoplasms and that smaller doses of roentgen rays sufficed.

Biologic Effect of Roentgen Rays.—Schmidt studied the effect of roentgen and radium irradiation on the positive and

negative outcome of the Lüttge-von Mertz alcoholic extract reaction. In twenty-five cancerous women with positive reactions, 80 per cent of negative reactions were obtained after irradiation with roentgen rays. Radium irradiation did not influence the outcome of the reactions. The effect of roentgen irradiation depended on changes in the serum proteins and blood lipoids.

Irritation Tumors.—Brandes reviews the literature on this subject up to the present time.

Wiener klinische Wochenschrift, Vienna

39: 1241-1268 (Oct. 21) 1926

Compression of the Cord in Chondrodystrophy. O. Albrecht and E. Ranzi.—p. 1241.
*Liver Disease with Cholesterolemia. A. Edelmann.—p. 1245.
Local Tuberculin Reactions. F. Hamburger.—p. 1247.
Cerebellar Hyperflexion Phenomenon. M. Weissmann.—p. 1248.
*Visceral Innervation in Parkinsonism. L. Hess and J. Goldstein. —p. 1250. (Ce'n.)
First Aid in Railroad Accidents. E. Ruff.—p. 1253.
Diet Plus Thyroid in Obesity. L. Pollak.—p. 1255.
*First Aid in Meniscus Injury. W. Kulka.—p. 1256.
Treatment of Tuberculosis of Bones and Joints. J. Hass. Supplement. —pp. 1-12.

Liver Disease with Cholesterolemia.—Edelmann observed several cases of a peculiar syndrome characterized by a yellow discoloration of the skin, especially the volar surface of hands, the ear lobes, the soft palate and the face (not the sclerotics). The blood bilirubin is low, but urobilin may be somewhat increased in the urine. The liver is as a rule enlarged and tender. The patients complain of pains in the joints and of digestive disturbances. In many the blood pressure is high. Neurasthenic symptoms are common. A considerable increase in blood cholesterol with a low bilirubinemia is pathognomonic of the disease.

Studies in Parkinsonism.—Hess and Goldstein determined the blood cholesterol in patients with chronic parkinsonism. It was slightly but constantly below normal in the large majority of their patients.

First Aid in Meniscus Injury.—Kulka advises the patient to sit on a table so that its edge is just back of the knees. Then the patient has to move the injured leg from the back obliquely forward and outward. The muscles relax and the incarcerated internal meniscus becomes free in from four to ten minutes.

Zeitschrift für Tuberkulose, Leipzig

46: 1-96 (Sept.) 1926

Reinfection in Tuberculosis. A. Ghon et al.—p. 1. (C'td.)
*Effect of Light on Tuberculin. W. Hausmann et al.—p. 32.
Official Relief of Indigence in the Crusade Against Tuberculosis. Oertel. —p. 37.
Tuberculosis in Prisons. E. P. Hellstern.—p. 44.

Influence of Light on Tuberculin.—Hausmann, Neumann and Schuberth irradiated diluted solutions of tuberculin with ultraviolet rays and noted that the intracutaneous tuberculin reactions became less pronounced or failed to occur. The effect was produced by rays of a wave length of less than 325 millimicrons. Concentrated solutions of tuberculin were resistant to light. The destructive effect of light on diluted solutions of tuberculin does not have any connection with the healing effect of light on tuberculous processes.

46: 97-176 (Oct.) 1926

Reinfection in Tuberculosis. A. Ghon et al.—p. 99. (C'cn.)
*Inhalation of Coal Dust and Connective Tissue in the Lung. K. Henius and O. Richert.—p. 123.
Dietetic Treatment of Pulmonary Tuberculosis. C. Martin.—p. 132.

Effect of Inhalation of Coal Dust on the Development of Connective Tissue in the Lungs.—Henius and Richert inoculated rabbits with tuberculosis and treated them simultaneously with inhalations of coal dust. Three months of treatment did not induce a development of connective tissue in the tuberculous lungs. The coal dust was usually equally distributed in the alveoli and in the interstitial tissue, and often a more pronounced accumulation of dust was noted around tuberculous foci. The inhalations were without effect on the type of tuberculosis.

Zentralblat für Chirurgie, Leipzig

53: 2641-2704 (Oct. 16) 1926

Internal Strangulation After Gastro-Enterostomy. A. Winkelbauer.—p. 2642.
Histologic Control of Operations. C. A. Hellwig.—p. 2647.
The Antipepsin Question. H. Hilarowicz and W. Mozolowski.—p. 2649.
*The Abdominal Muscles and the Statics of the Human Body. J. Rey.—p. 2651.
Solitary Cyst of Horseshoe Kidney. H. Viethen.—p. 2655.
*Unjustified Entero-Anastomosis. W. Noetzel.—p. 2657.

Paralysis of the Abdominal Musculature and Its Reaction on the Statics of the Human Body.—Rey affirms that Trendelenburg's phenomenon may be occasioned by causes lying outside the pelvic region; that paralysis of the obliquus abdominis on one side always results in a positive Trendelenburg phenomenon in the hip joint of the other side. He has seen this in cases following poliomyelitis, in which the function of the gluteal muscles was intact. Application of a short plaster corset, which restored the connection between the costal arch and the crest of the ilium, did away with the symptom and thus bore out his assumption. He is now working on the problem of constructing a substitute for the paralyzed obliquus abdominis by mechanical or surgical means. He asserts further that so-called paralytic scoliosis is frequently the result of unilateral paralysis of the abdominal muscles.

Posterior Retrocolic Gastro-Enterostomy and Entero-Anastomosis Between the Efferent Jejunal Loop and the Transverse Colon.—The following case is brought forward by Noetzel as a protest against the tendency of the times to perform surgical operations without sufficient indications. A man, aged 32, was operated on for gastric ulcer, and ten days later was operated on again because of continuous vomiting. The vomiting ceased, but since the second operation he suffered constantly from diarrhea of extreme severity and became greatly emaciated. The stomach symptoms were unrelieved. At operation (sixteen months after the original intervention) a wide anastomosis between the jejunum and the transverse colon and a posterior retrocolic gastroenterostomy were found. The gallbladder was filled with small stones. The stones were removed and the pyloric portion of the stomach was extensively resected, the jejunal loop was separated from the stomach and sutured, the anastomosis between the jejunum and large intestine was abolished, and this section of the intestine was closed. Recovery was smooth and the patient gained rapidly in weight. In this case the vicious circle obviously assumed had never existed, but it is a matter for wonder that he had not died of inanition during the sixteen months that the anastomosis existed between a high jejunal loop and the transverse colon.

Zentralblätt für Gynäkologie, Leipzig

50: 2609-2672 (Oct. 9) 1926

*The Blood Sugar in Diabetes in Pregnancy. E. Holzbach.—p. 2610.
Prophylactic Stimulation Therapy and Surgical Mortality. R. Scheffer. —p. 2613.
*Active Treatment of Abortion. E. Kottlors.—p. 2616.
*The Fetal Heart in Delayed Rupture of the Membranes. J. Bondi.—p. 2624.
Hemorrhagic Diathesis in Pregnancy. W. Liebe.—p. 2625.
Transverse Incision Layer by Layer in Laparatomy. H. van de Velde. —p. 2633.
Ovarian Origin of Hyperplasia of the Uterine Mucosa. A. Babes.—p. 2639.

50: 2673-2736 (Oct. 16) 1926

Tissue Culture. A. Mayer and K. Heim.—p. 2688.
Suture of Cervical Tears and Tamponade of Uterus. A. Mueller.—p. 2696.
Morphology and Biology of the Uterine Mucosa During Menstruation. W. Lahm.—p. 2699.
Clinical Course and Histology of Osteomalacia. M. Floris.—p. 2704.
Sinus Thrombosis in the Puerperium. G. Lunz.—p. 2710.
Roentgen-Ray Treatment of Gonorrheal Bartholinitis. H. Sieber.—p. 2713.
Atresia and Displacement of the Organs of the Genito-Urinary and Rectal Tract. D. Pulvermacher.—p. 2719.
Anesthesia in Vaginal Operations. A. Arndt.—p. 2731.

50: 2737-2800 (Oct. 23) 1926

Anemia of Pregnancy and the Question of Sterilization. P. Esch.—p. 2738.
The Sugar of the Cerebrospinal Fluid and the Menstrual Cycle. K. Hellmuth.—p. 2741.

Paratyphoid B Bacillus in Ovarian Abscess. R. Cordua and E. A. Keck.—p. 2747.
Syringocystadenoma of the Vulva. W. Hoeck.—p. 2757.
Birth Obstruction from Bandl's Ring. H. H. Schmid.—p. 2760.
Case of Hyperhidrosis of Pregnancy. R. Pohl.—p. 2767.
Two Unusual Tumors of the External Genital Organs. G. Gatter.—p. 2769.
Spontaneous Separation of the Symphysis During Labor. F. Eisenberger.—p. 2771.

The Blood Sugar Curve in Diabetes in Pregnancy.—Holzbach describes a case in which, in a diabetic woman, aged 29, the death of the fetus in the thirty-sixth week of pregnancy was followed immediately by a rise of the mother's blood sugar from 120 to 224 mg. per hundred cubic centimeters. The sugar in the urine increased to 44.8 Gm. in twenty-four hours and the patient became gravely ill; coma, however, did not develop. Insulin was not given. The next day a dead child, weighing 4,250 Gm., was delivered in a markedly macerated condition. The mother's blood sugar was 256 mg. per hundred cubic centimeters. Insulin treatment was now started and the patient responded promptly. She was under observation for the next two weeks. She showed a certain hypersensitivity to insulin and frequently became hypoglycemic. The urine was sugar-free on her discharge, but the blood sugar still exceeded 200 mg. per hundred cubic centimeters if insulin treatment was interrupted. Holzbach places this case, in which a compensated diabetes was suddenly converted into an uncompensated one by the death of the fetus, beside the animal experiments of Carlson and Ginsburg, in which removal of the pancreas from pregnant dogs did not cause hyperglycemia or glycosuria so long as the living fetus remained in the uterus. His conclusions are that, in the later weeks of pregnancy at least, the fetal pancreas gives out a hormone which takes part with the maternal hormone in carbohydrate metabolism and is able to protect the mother in case of diabetes. In the case here described, the fetus might have continued to live, had not the intake of calories been considerably and suddenly raised in an effort to combat inanition in the mother. He urges the use of insulin in the attempt to keep the fetuses of diabetic mothers alive.

Two Years' Active Treatment of Abortion.—Kottlors discusses the relative value of active and expectant treatment of abortion and the various methods offered for determining the virulence of the micro-organisms present. He maintains that we have not as yet a method of determining exactly the risk of operation on bacteriologic grounds. Statistics show equally good results from conservative and from active treatment. Hence he prefers surgery, as being more sparing of the patient's strength. In Holzbach's clinic, in the last two and one-half years, 573 cases of abortion have been treated, of which 458 were treated actively. The mortality was limited to fourteen cases, in which the general condition was hopeless on admission. Of the others—366 without fever on admission and ninety-two with fever—the morbidity was 1.6 and 19.6 per cent, respectively, for the two groups. Except for one case in the febrile group, complications did not arise. The average stay in hospital in the afebrile group was 7.5 days, in the febrile group 9.6 days. The low morbidity he ascribes chiefly to the prophylactic stimulation therapy in use in this clinic in all unclean cases.

Disturbance in the Frequency of the Fetal Heart Tones in Delayed Rupture of the Membranes.—In 500 births in the last five years, Bondi noted a drop in the frequency of the fetal heart tones to less than a hundred a minute in five cases of delayed rupture of the bag of waters. On artificial rupture, the amniotic fluid was found discolored. In three cases, the heart tones became normal again and in the course of from one to three hours the children were born in good condition. In the other two, instrumental delivery was necessary. One child was born dead; the other was asphyxiated and was restored to life with difficulty. It is not easy to say why delay in the rupture of the membranes is sometimes dangerous for the child. In three of these cases, the umbilical cord was coiled tightly around the fetus; in the other two, a cause for the slowing of the heart could not be found. The amniotic fluid was approximately normal in amount.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

70: 2083-2214 (Nov. 6) 1926

Bromoform Treatment of Whooping Cough. H. Jakobs.—p. 2088.
Women Physicians in Holland and the Dutch East Indies. C. Nuysink-Steinbuch.—p. 2091.
*Simultaneous Intra-Uterine and Extra-Uterine Pregnancy. A. G. J. Hermans.—p. 2097.
Value of Blood Sugar Examinations. B. Sybrandy.—p. 2107.
Digitalis and Strophanthin. A. J. Boekelman, Jr.—p. 2112.

Simultaneous Intra-Uterine and Extra-Uterine Pregnancy.—Hermans reports the case of a woman, aged 40, with five healthy children, who in the third month of pregnancy suddenly developed a chill, pains in the lumbar region and vaginal hemorrhage. The pulse was small and weak, with 130 beats a minute. The vagina was blue and the uterus was retroverted. To the left of the uterus, in the region of Douglas' pouch, was a painful area. The condition was diagnosed as ruptured extra-uterine pregnancy. A median suprasymphyseal laparatomy was performed, and a ruptured hematosalpinx was found on the left side of the uterus. Twelve hours after the operation the patient was delivered of a fetus 7 cm. in length. Usually it is almost impossible to recognize the coexistence of extra-uterine and intra-uterine fetation before serious complications have arisen. When abortion cannot be suspected, a protrusion of the amniotic sac is a valuable symptom. The condition of the uterus is of importance in the matter of treatment. At operation, corpus luteum and ovary should, if possible, be preserved.

Acta Chirurgica Scandinavica, Stockholm

61: 1-105 (Oct. 19) 1926

A Splint for Fracture of the Humerus. C. Semb.—p. 1.
Two Cases of Concretions in the Pancreas. E. Perman.—p. 23.
*Ulcer of the Stomach in Childhood. N. Paus.—p. 40.
A Case of Bipartite Patella. N. Paus.—p. 44.
Ileocecal Intussusception. H. Lavesson.—p. 48.
Hemangiomas of the Spinal Column. E. Perman.—p. 91.

Two Cases of Ulcer of the Stomach in Childhood.—The condition is rare in childhood. Paus reports two cases in boys, aged 9 and 14 years, respectively. In the first case the gastric pain had existed for three years; vomiting had only recently become a prominent symptom. In the second case, food had always, so far as the boy's memory reached, brought on pain. Resection was performed in the former case, gastro-enterostomy in the latter. Deep callous ulcers of the pyloric region, perforating into the pancreas, were found in both instances. The patients recovered. Paus' statistics show only these two cases in children among a total of 168 cases in which operation was performed.

Ugeskrift for Læger, Copenhagen

88: 1021-1040 (Nov. 11) 1926

Treatment of Pulmonary Tuberculosis by Walbum's Method. N. Lunde.—p. 1021. C'td.
Trichophagy. E. Sylvest.—p. 1023.
Injection Therapy of Varix. O. Horn.—p. 1024.

88: 1041-1066 (Nov. 18) 1926

Development of Otolaryngology. E. Schmiegelow.—p. 1041.
*Treatment of Pulmonary Tuberculosis According to Walbum's Method. N. Lunde.—p. 1045. C'cn.

Treatment of Pulmonary Tuberculosis by Walbum's Method.—Lunde gives a preliminary report of his treatment of fifty-two cases of tuberculosis by injection of small doses of cadmium. Peritoneal, pleural, pleuropulmonary and glandular reactions were observed during the treatment. In 63 per cent of cases presenting tubercle bacilli in the sputum the patients were rendered free from bacteria, and in 92 per cent there has been an average increase in weight of 6.4 Kg. The time of treatment has been too short to justify a therapeutic evaluation of the method. It was difficult to obtain total sterilization in a short time. Primarily, cadmium had a nonspecific destructive effect on toxins, seen in a lowering of the temperature, and, secondarily, a specific effect, which was demonstrated in increased bacteriolysis and chemotaxis with liberation of endotoxins. He considers that the metal salt therapy is very effective and achieves rapid results, but warns against the use of large or quickly increasing doses and emphasizes the danger of fatal toxicosis, caused by rapid destruction of toxins.